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Part II

Environmental Protection Agency

Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Electrical Equipment

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 761

[OPTS-(62015C); TSH-FRL 2184-6]

Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions; Use in Electrical Equipment

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This final rule amends portions of the existing PCB rule: this action is being taken in response to an order from the U.S. Court of Appeals for the District of Columbia Circuit. This rule authorizes the use of PCBs in capacitors and the use and servicing of PCBs in electromagnets, circuit breakers, voltage regulators, reclosers, cable, switches (including sectionalizers and motor starters), and transformers other than railroad transformers. It also provides for the distribution in commerce and disposal of this electrical equipment.

DATES: These amendments shall be considered promulgated for purpose of judicial review under section 19 of TSCA at 1:00 p.m. Eastern Daylight Time on September 8, 1982. These amendments shall be effective on September 24, 1982. As of August 19, 1982, the provisions of the PCB rule (44 FR 31514, May 31, 1979, recodified at 47 FR 19527, May 6, 1982) amended by this action and the Interim Measures Program (46 FR 16090, March 10, 1981) are no longer in effect unless the U.S. Court of Appeals for the District of Columbia Circuit has acted to stay further its mandate. EPA has asked the court for a stay of the mandate that would leave the 1979 rule as it applies to electrical equipment and the Interim Measures Program in effect until these amendments become effective. The court has not acted as of the date of signature of these amendments. If the court does grant EPA's request, the court's action will likely be retroactive to August 19, 1982. As a matter of Agency policy, EPA will not enforce the provisions of section 6(e) of TSCA against any person who complies with the provisions of the 1979 rule and the Interim Measures Program between the expiration of the current stay, August 19, 1982, and the date when the court grants EPA's request of this rule becomes effective, whichever comes first.

FOR FURTHER INFORMATION CONTACT: Douglas G. Bannerman, Acting Director, Industry Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-509, 401 M St., S.W., Washington, D.C. 20460, Toll free: (800-424-9065), In Washington, D.C. (554-1404), Outside the USA: (Operator-202-554-1404).

Copies of this rule and its support documents can be obtained from the Industry Assistance Office listed above.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 2070-0003.

I. Recodification of 40 CFR Part 761

Title 40 of the Code of Federal Regulations, Part 761, which regulates polychlorinated biphenyls (PCBs), has been reorganized. Notice of the recodification appears in the Federal Register of May 6, 1982 (47 FR 19527). This final rule uses the following new designations:

Old designation	New designation
Subpart A, § 761.2	Subpart A, § 761.3.
Subpart B, § 761.10	Subpart D, § 761.60.
Subpart C, § 761.20	Subpart C, § 761.40.
Subpart D, § 761.30	Subpart B, § 761.30.
Subpart D, § 761.31	Subpart B, § 761.35.
Subpart E, § 761.42	Subpart D, § 761.65.

II. Background

Section 6(e) of the Toxic Substances Control Act (TSCA) generally prohibits the use of PCBs after January 1, 1978. The statute sets forth two exceptions under which EPA may, by rule, allow a particular use of PCBs to continue. Under section 6(e)(2) of TSCA, EPA may allow PCBs to be used in a "totally enclosed manner." A "totally enclosed manner" is defined by TSCA to be "any manner which will ensure that any exposure of human beings or the environment to a polychlorinated biphenyl will be insignificant, as determined by the Administrator by rule." TSCA also allows EPA to authorize the use of PCBs in a manner other than a "totally enclosed manner" if the Agency finds that the use "will not present an unreasonable risk of injury to health or the environment."

EPA promulgated a rule, which was published in the Federal Register of May 31, 1979 (44 FR 31514), to implement sections 6(e) (2) and (3) of TSCA. This rule is listed in the Code of Federal Regulations under 40 CFR Part 761. The rule designated all intact, nonleaking capacitors, electromagnets, and transformers other than railroad transformers as "totally enclosed", thus permitting their use without specific authorization or conditions. The Environmental Defense Fund (EDF) petitioned the U.S. Court of Appeals for the District of Columbia Circuit to review that portion of the PCB rule that designated the use of intact, nonleaking capacitors, electromagnets and transformers (other than railroad transformers) as "totally enclosed." (*Environmental Defense Fund, Inc.* v. *Environmental Protection Agency*, 636 F.2d 1267). On October 30, 1980, the court decided that there was insufficient evidence in the record to support the Agency's classification of transformers, capacitors, and electromagnets as totally enclosed. The court invalidated this portion of the rule and remanded it to EPA for further action. The effect of this decision would have been to make the use of capacitors, electromagnets, and transformers other than railroad transformers, containing any concentration of PCBs a violation of section 6(e) of TSCA. An immediate ban of these uses would not only have disrupted electric service but would also have caused severe economic hardship for the public and United States industry. Therefore, EPA concluded that it was completely impractical to take no action and allow a total ban on the use of this equipment to go into effect immediately.

On January 21, 1981, EPA, EDF, and certain industry intervenors in *EDF* v. *EPA* filed a joint motion with the court. The motion asked for a stay of the court's mandate setting aside the classification of transformers, capacitors, and electromagnets as totally enclosed. During the period of the stay, EPA agreed to conduct a rulemaking on the use of PCBs in electrical equipment beginning with an Advance Notice of Proposed Rulemaking (ANPR). In addition, the Edison Electric Institute (EEI) through the Utility Solid Waste Activities Group (USWAG) agreed to develop some of the factual material necessary for the rulemaking. The parties also agreed on interim risk-reduction measures (the Interim Measures Program) for transformers containing PCBs at 50 ppm or greater. They suggested that the court make these measures a condition of the eighteen-month stay.

On February 12, 1981, the court granted the requests of the joint motion and entered an order. The text of the court's order was published in the Federal Register of March 10, 1981, along with EPA's ANPR on the use of PCBs in electrical equipment (46 FR 16090 and 46 FR 16096, respectively). The court's order allows the totally enclosed classification (40 CFR 761.20), to remain in effect for the duration of the stay. Therefore, persons who use PCB-containing transformers, capacitors, and

electromagnets may use this electrical equipment during the stay of the court's mandate, providing that they comply with the PCB rule and the Interim Measures Program which is detailed in the court's order.

The February 12, 1981, court order required EPA to promulgate a final rule within six months of receipt of the study from EEI/USWAG. Since the final report of the EEI/USWAG study was received on February 19, 1982, EPA was required to promulgate this final rule on the use of PCBs in electrical equipment by August 19, 1982. EPA's proposed rule regarding the use of PCBs in electrical equipment was published in the **Federal Register** of April 22, 1982 (47 FR 17426).

This final rule will become effective on September 24, 1982. The court-ordered stay of mandate is currently scheduled to expire on August 19, 1982. If that mandate were to issue before this rule becomes effective, the use of PCB's in electrical equipment covered by the use authorizations contained in this rule would be a violation of section 6(e)(2) of TSCA until the rule becomes effective. Therefore, on August 5, 1982, EPA requested that the court further stay its mandate until November 1, 1982. As of the date of signature of these amendments, the court has not acted on EPA's request. EPA expects that the court will grant the further stay and that the stay will be retroactive to August 19, 1982. However, until the court grants EPA's request or these amendments become effective, persons affected by the amendments will be uncertain about what rules to follow. As a matter of Agency policy, EPA will not enforce the provisions of section 6(e) of TSCA against any person who complies with the provisions of the 1979 rule and the Interim Measure Program between the expiration of the current stay, August 19, 1982, and the date when the court grants EPA's request or this rule becomes effective, whichever comes first.

In order to avoid a "race to the courthouse" by persons seeking judicial review of this rule, EPA has decided to designate the time and date of "promulgation" of this rule as 1:00 p.m. Eastern Daylight Time on September 8, 1982. The Agency has previously taken this approach for rules promulgated under the Clean Water Act (see 40 CFR 100.01, 45 FR 26048). The Agency will be considering a general rule for TSCA similar to 40 CFR 100.01.

III. Electrical Equipment Containing PCBs

This rulemaking was initiated to deal with those uses of PCBs which EPA had formerly classified as totally enclosed (transformers other than railroad transformers, capacitors, and electromagnets). (Any reference to transformers in this rule does not include transformers used on locomotives and self-propelled railroad cars unless otherwise specified.) In general, this equipment falls into two categories: (1) Equipment designed to contain PCBs at a high concentration and (2) equipment designed to contain mineral oil. Because of past manufacturing and servicing practices, the mineral oil-filled equipment often contains PCBs at low concentrations. The 1979 rule defined a PCB Transformer as one containing more than 500 ppm and a PCB-Contaminated Transformer as one containing between 50 and 500 parts per million (ppm). Very little mineral oil equipment contains PCBs at a concentration of 500 ppm or greater. This final rule makes frequent reference to the three ranges of PCB contamination: 0–50 ppm, 50–500 ppm, and greater than 500 ppm.

While administering the May 1979 PCB rule and gathering information for this rulemaking, EPA has identified five additional categories of oil-filled electrical equipment that contain PCB's. Those are: voltage regulators, switches (including sectionalizers and motor starters), circuit breakers, reclosers, and cable. These uses were not addressed in the May 1979 PCB rule because EPA was not aware that these devices contained PCBs.

IV. Summary of the Final Rule

This final rule modifies and clarifies some of the requirements presented in the proposed rule because of information obtained during the comment period and the public hearing (June 7–10, 1982) on the proposed rule. EPA's responses to various issues raised during this rulemaking are discussed in this "preamble" and are presented in more detail in a document titled "Support Document for the Electrical Equipment Use Rule/Response to Comments." The major elements of the final rule are summarized in the following list, with changes from the proposed rule highlighted. This final rule:

1. Uses the recodified version of the PCB rule (40 CFR Part 761).

2. Prohibits the use of PCB Transformers and PCB-filled electromagnets (with a PCB concentration of 500 ppm or greater) posing an exposure risk to food or feed, after October 1, 1985, and requires a weekly inspection of this equipment for leaks of dielectric fluid until that date. (The proposed rule would have authorized the use of this equipment indefinitely with a requirement for weekly inspections).

3. Authorizes the use of all other PCB Transformers for the remainder of their useful lives, and requires a quarterly inspection of this equipment for leaks of dielectric fluid.

4. Authorizes the use of large PCB Capacitors that are located in restricted-access electrical substations for the remainder of their useful lives. (The proposed rule would have only authorized the use of this equipment for ten years.)

5. Authorizes the use of large PCB Capacitors that are located in contained and restricted-access indoor installations for the remainder of their useful lives. (The proposed rule would have authorized the use of this equipment for only ten years.)

6. Prohibits the use of all other large PCB Capacitors after October 1, 1988. (The proposed rule would have authorized the use of this equipment for ten years.)

7. Eliminates the proposed inspection requirements for all large PCB Capacitors.

8. Authorizes the use of all PCB-containing, mineral oil-filled electrical equipment for its remaining useful life.

9. Clarifies what constitutes electrical equipment posing an exposure risk to food or feed.

10. Allows oil-filled cable to be assumed to contain less than 50 ppm PCBs if the actual PCB concentration is unknown. (The proposed rule would have required that the concentration be assumed to be between 50 and 500 ppm if it were unknown.)

11. Allows storage for disposal of nonleaking PCB Large High Voltage Capicators and PCB-Contaminated Electrical Equipment outside of qualified storage facilities after January 1, 1983. The proposed rule prohibited this storage after January 1, 1983.

12. Requires records of inspection and maintenance histories to be maintained for at least 3 years after disposing of PCB Transformers. (The proposed rule would have required record retention for five years.)

13. Clarifies that "disposal" includes leaks of PCBs.

14. Does not include the language contained in the proposed rule regarding the required extent of cleanup of PCB spills. Comments urged EPA to postpone consideration of this language, and the extent of cleanup of PCB spills will not be dealt with at this time.

V. Use Authorizations

As previously described, section 6(e)(2) of TSCA allows uses of PCBs in a

totally enclosed manner to continue without restriction. Section 6(e)(2)(C) defines the term "totally enclosed" to mean "any manner which will ensure that any exposure of human beings or the environment to a polychlorinated biphenyl will be insignificant as determined by the Administrator by rule." In the May 31, 1979 rule, EPA defined insignificant exposure as "not measurable or detectable by any scientifically acceptable analytical method." After examining the information submitted in response to this rulemaking, EPA has decided that no electrical equipment uses should be categorized as use in a totally enclosed manner. The leakage data contained in this information show that all types of electrical equipment leak during normal operation. Since this leakage could result in some detectable exposure of humans and the environment to PCBs, EPA believes that it is not appropriate to classify the use of this equipment as use in a totally enclosed manner.

This final rule allows the use of certain electrical equipment containing PCBs to continue under specified conditions because EPA has concluded that the uses will not present an unreasonable risk of injury to human health or the environment. This finding is in accordance with the provisions of section 6(e)(2)(B) of TSCA. The specific unreasonable risk findings are made for each authorized use in later sections of this preamble.

To determine whether a risk is unreasonable, EPA balanced the probability that harm will occur from the use against the benefits to society of the proposed regulatory action. In doing this, EPA has considered the following factors:

1. The effects of PCBs on human health and the environment.
2. The magnitude of PCB exposure to humans and the environment.
3. The benefits of using PCBs and the availability of substitutes for PCB uses.
4. The economic impact resulting from the rule's effect upon national economy, small business, technological innovation, the environment, and public health.

These are the same types of considerations listed in section 6(c) of TSCA, which describe factors EPA must consider in deciding whether a chemical presents an unreasonable risk under section 6(a) of TSCA.

A. Effects on Human Health and the Environment

In any regulatory context, agencies have imperfect data, but they still must regulate on the basis of the best data available. There are differing interpretations of data regarding the potential risks of PCBs to human health and the environment. Although additional study may be suggested, EPA is concerned about the health and environmental effects of PCBs on the basis of the data available now. These data are sufficient to support EPA's approach in this rule.

In *EDF v. EPA*, EPA's regulatory cutoff of 50 ppm was set aside by the court. As a result, other rulemaking activities are currently underway which deal with PCBs in low concentrations. EPA has been ordered by the D.C. Court of Appeals to submit, by November 1, 1982, a plan for dealing with certain PCBs in concentrations under 50 ppm. EPA expects that the implementation of this plan will lead to additional rulemaking.

The health effects data base for PCBs is continuously increasing. The Agency will consider any additional pertinent information on health and environmental effects and information on risks associated with PCBs during the development of that future rulemaking.

Should new information on health effects or other areas of concern with PCBs become known, Section 21 of TSCA provides a mechanism for interested persons to petition the Agency to initiate new rulemaking or modify existing rules.

In determining whether authorizations are warranted, EPA considered information regarding the effects of PCBs on human health and the environment. The effects of PCBs were described in various documents which are part of the rulemaking record for the May 31, 1979, rule. EPA evaluated this information, new information submitted to the Agency, as well as other recent literature on the effects of PCBs. The results are presented in the document "Response to Comments on Health Effects of PCBs". This document is included in the rulemaking record. Copies of this document are available through the Industry Assistance Office (see the "FOR FURTHER INFORMATION CONTACT" paragraph).

1. *Health effects.* Documents on health effects were submitted to EPA by (1) the Edison Electric Institute (EEI) together with the Utility Solid Waste Activities Group (USWAG) and the National Rural Electric Cooperative Association (NRECA), (2) the National Electrical Manufacturers Association (NEMA), and (3) the Chemical Manufacturers Association (CMA). These documents are included in the rulemaking record. These documents concluded that the use of PCBs in electrical equipment does not present a significant risk to human health.

EPA has reached conclusions different from those presented in the documents submitted. While PCBs have not been found to be uniquely toxic, EPA concludes that they are toxic and persistent.

EPA agrees with the comments submitted that chloracne occurs in humans exposed to PCBs. Although the effects of chloracne are reversible, EPA does not consider it insignificant. Chloracne is painful, disfiguring and may require a long period of time before symptomatology disappears. Other areas of major concern have been identified by EPA. EPA finds that reproductive effects, developmental toxicity, and oncogenicity are areas of concern and may produce effects in humans exposed to PCBs.

Available data show that some PCBs have the ability to alter reproductive processes in mammalian species, sometimes even at doses that do not cause other signs of toxicity. Animal data and limited available human data indicate that prenatal exposure to PCBs can result in various degrees of developmentally toxic effects. Postnatal effects have also been demonstrated on immature animals following exposure prenatally and via breast milk.

Available animal studies indicate an oncogenic potential (the degree of which would be dependent on exposure). Available epidemiology data are not adequate to confirm or negate oncogenic potential in humans at this time. Further epidemiological research is needed in order to correlate human and animal data, but EPA does not find any evidence to suggest that the animal data would not be predictive of human potential.

EPA agrees that little or no mutagenic activity from PCBs is indicated from available data. It is EPAs opinion that more information is needed to draw a final conclusion on the possibility of mutagenic effects from PCBs.

EPA does not attribute all the effects observed with PCBs to be due to toxic impurities. Relatively pure PCB congeners have been shown to produce toxicity equivalent to that found when testing commercial PCB mixtures containing higher levels of impurities.

EPA also does not assume that all PCBs are equivalent toxicologically. It cannot be assumed that if one PCB congener is positive or negative for a specific health effect, then all PCB congeners are also positive or negative for that specific health effect. Research is just beginning in this area; many more studies need to be conducted on specific congeners before conclusions can be

reached on an isomer or congener specific basis.

2. *Environmental effects.* Very little information was submitted during the comment period with regards to the environmental effects of PCBs. EPA has conducted a literature search to provide additional information on the environmental effects of PCBs.

PCBs have been shown to affect the productivity of phytoplankton and the composition of phytoplankton communities. Deleterious effects on environmentally important freshwater invertebrates from PCBs have been demonstrated. PCBs have also been shown to impair reproductive success in birds and mammals.

It has been demonstrated that PCBs are toxic to fish at very low exposure levels. The survival rate and the reproductive success of fish can be adversely affected in the presence of PCBs. Various sublethal physiological effects attributed to PCBs have been recorded in the literature. Abnormalities in bone development and reproductive organs have also been demonstrated.

EPA concludes that PCBs can be concentrated and transferred in freshwater and marine organisms. Transfer up the food chain from phytoplankton to invertebrates, fish, and mammals can result ultimately in human exposure through consumption of PCB-containing food sources.

3. *Risks.* Toxicity and exposure are the two basic components of risk. As indicated above, EPA concludes that in addition to chloracne there is the potential for reproductive effects and developmental toxicity as well as oncogenic effects in humans based on animal data. EPA also concludes that PCBs do present a hazard to the environment. Potential for exposure of the environment to PCBs was included in EPA's consideration of each category of use of PCBs in electrical equipment.

Minimizing exposure to PCBs should minimize any potential risk. The requirements of this rule will result in the reduction of exposure, and in some uses eliminate exposure to PCBs, relative to present exposure levels from electrical equipment use. EPA's analysis of alternative conditions for use authorizations includes examining the effectiveness of each condition in reducing exposure, thereby reducing the associated risk.

B. General Benefits of Using Electrical Equipment

The electrical equipment being considered in this rulemaking is used extensively by electric utilities and other industries to provide efficient and reliable electrical energy. There are currently millions of pieces of electrical equipment in use which contain PCBs. Although allowing the statutory ban to become effective is theoretically one available alternative, EPA believes an immediate ban on these uses would be unacceptable since it would disrupt electric service throughout the United States. An adequate supply of non-PCB replacement equipment and storage/disposal capacity is not immediately available. The resulting economic impact associated with an immediate ban has been conservatively estimated at about $175 billion in the Regulatory Impact Analysis prepared for this rulemaking.

The other factors that EPA considered to determine whether uses of PCBs in electrical equipment warrant authorization, the balancing of these factors, and EPA's conclusions regarding unreasonable risks are discussed separately in this notice for each category of electrical equipment.

C. Use and Servicing of Transformers

This unit on the use and servicing of transformers analyzes only those transformers that do not pose an exposure risk to food or feed. The analysis of equipment posing an exposure risk to food or feed is found in Unit E of this portion of the preamble.

Transformers are used extensively by electric utilities and other industries to transmit and distribute electric power efficiently. The use of PCBs in transformers has resulted in the dielectric fluid of some transformers containing between 60 and 70 percent PCBs by design. Transformers designed to contain mineral oil dielectric fluid have been contaminated with PCBs during past servicing and manufacturing activities.

EPA estimates that there are 39,600 PCB Transformers designed to contain PCBs in use in the electric utility industry and approximately 91,600 in all other applications. EPA also estimates that there are over 20 million mineral oil transformers in use in the electric utility industry and about 5 million in all other applications. These estimates are for the end of 1981 and are summarized in the proposed rule for this rulemaking (47 FR 17426, April 22, 1982).

Transformers are located throughout the nation's electrical generation, transmission, and distribution systems, many of which are located near consumers of electric power. However, transformers designed to contain PCBs are more restricted in their distribution than other transformers. These PCB Transformers are located in secure indoor locations and in electrical substations and are not mounted on utility poles throughout electric service areas.

1. *Magnitude of exposure.* EPA is concerned about releases of PCBs from all transformers because of the potential to expose humans and the environment to PCBs. In general, PCB Transformers pose greater exposure risks due to the use of higher concentration and larger quantities of PCBs than mineral oil-filled transformers. A release of PCBs into the environment has the potential to reach acquatic systems, build up in the food chain and ultimately expose humans through ingestion of PCBs.

Although it is impossible to measure exactly the effectiveness of an inspection and maintenance program in avoiding releases of PCBs to the environment, such a program will reduce the actual amount of PCBs released from PCB Transformers by correcting otherwise undetected leaks of dielectric fluid and reducing the number of transformer failures due to improper maintenance. Additional benefits of this program include containment of active leaks which are discovered and cleanup and disposal of leaked material. All of these benefits will result in reduced exposure to PCBs. EPA estimates that without an inspection and maintenance program as many as 1.3 million pounds of PCBs could be released from PCB Transformers over their entire lifetimes.

2. *Benefits of PCBs and availability of substitutes.* Although the electrical properties of PCBs are not as good as mineral oil, PCBs have a higher fire point than mineral oil. It is the fire resistance of PCBs that makes them an excellent dielectric fluid in transformers located where concerns for fire safety are paramount.

PCB Transformers can be replaced by comparably rated mineral oil transformers even where fire safety is an issue as long as fire codes and insurance requirements allow it. In most cases these restrictions require additional fire prevention measures, such as vaults, sprinklers, or alarms.

A number of other substitute dielectric fluids have been developed to replace PCBs. These fluids can be used in replacement transformers or used to refill transformers which contain PCB dielectric fluid. Many of these fluids appear to possess acceptable characteristics. The National Electrical Manufacturers Association estimates that new transformers to replace all PCB Transformers could be manufactured in five years or less using these substitute fluids. Substitute fluids for PCBs offer satisfactory electrical properties and flammability characteristics which are much better than mineral oil. The

persistence and bioaccumulative properties of PCB substitute fluids are less those of PCBs.

Persons owning mineral oil transformers containing PCBs may substitute for the PCBs by purchasing new equipment that does not contain PCBs, replacing the contaminated fluid with new fluid that does not contain PCBs, or otherwise servicing the existing dielectric fluid in order to reduce the PCB concentration.

3. *Economic and environmental impacts of regulatory requirements.* As discussed under "Magnitude of Exposure," the actual environmental impact of a quarterly inspection program for PCB Transformers that do not pose an exposure risk to food or feed is impossible to measure. However, a quarterly inspection and maintenance program has been demonstrated for more than one year under the Interim Measures Program to be an effective measure in reducing total releases of PCBs from these transformers. This fact was confirmed by comments in response to the ANPR and the proposed rule. Comments indicated that this inspection and maintenance program reduced releases of PCBs from transformers and supported it as an effective risk reduction measure.

EPA estimates that the cost of a quarterly inspection and maintenance program is $28.8 million for the electric utility industry and $47.9 million for nonutility industries. These estimates represent total costs of the required program over the entire useful lives of the transformers. Additional costs and benefits associated with the use authorization and conditions are discussed in the Regulatory Impact Analysis developed for this final rule. This document also contains an analysis of costs and benefits of other regulatory options considered but not adopted, including some options which were considered in the development of the proposed rule.

4. *Findings on the use and servicing of transformers.* In the proposed rule, EPA discussed whether the use of PCBs in transformers should continue and analyzed options that would effectively reduce the risks of exposure from the use of PCB-containing transformers. The proposed rule authorized the use of PCBs in transformers for the remainder of their useful lives, subject to certain conditions.

Several comments disagreed with EPA's proposed rule. These comments suggested a wide range of alternatives, from phasing out the use of PCBs in all transformers in a very short period of time to authorizing them with no conditions. However, no comments provided information that leads EPA to conclude that its findings in the proposed ruled were inappropriate.

The cost of imposing the more restrictive conditions suggested by some comments are not reasonable in comparison to the benefits of such conditions. For example, one comment suggested that the use of PCBs in all mineral oil transformers should be phased out in a very short period of time, perhaps as short as three years. Such an approach would cost millions of dollars per pound of PCB release avoided. EPA concludes that the imposition of such a condition is not reasonable.

On the other hand, some comments suggested the raising of the upper limit of the range of contamination of PCB-Contaminated Transformers from 500 ppm to 5000 ppm. Such an approach would result in unnecessary and avoidable exposure to PCBs since there is information in the rulemaking record that indicates that technology is available at reasonable cost to reduce the PCB concentration in transformers to below 500 ppm. Comments at the hearing by people who have performed such operations or have studied the subject indicate that concentrations below 500 ppm have been achieved by draining, flushing, and refilling followed by additional servicing.

After reviewing all of the information submitted in response to the proposed rule and other information in the rulemaking record, EPA concludes that the requirements presented in the proposed rule for transformers not posing an exposure risk to food or feed were reasonable. Details of the calculations of costs and benefits which led EPA to this conclusion are found in the Regulatory Impact Analysis. EPA's responses to specific comments are contained in the Support Document for the Electrical Use Rule—Response to Comments.

This final rule does not make any major changes to the proposed conditions of the use authorization for PCB-containing transformers that do not pose an exposure risk to food or feed. The few minor changes that were made are explained in subsequent paragraphs.

To reduce the risks associated with the release of PCBs from PCB Transformers, this rule requires inspection and maintenance procedures as a condition to the use authorization for all PCB Transformers. These conditions vary with the potential for exposure to PCBs. A quarterly inspection and maintenance program is required for all PCB Transformers that do not pose an exposure risk to food or feed. However, the inspection frequency is reduced to annually for any PCB Transformer which contains less than 60,000 ppm PCBs or has secondary containment capable of holding at least 100 percent of the transformer's fluid volume. No inspection or follow-up maintenance procedures are required for transformers containing less than 500 ppm PCBs because of the low concentration of PCBs involved.

A program of inspection and maintenance for PCB Transformers reduces the amount of PCBs released and resultant PCB exposure by finding, stopping, and cleaning up small leaks of dielectric fluid. Properly maintained transformers are less likely to experience leaks, spills, or equipment failure. An inspection program also keeps company personnel informed and alert to the potential impact of PCBs discharged from electrical equipment.

Although some data submitted in response to the proposed rule indicated that certain government-owned PCB Transformers leak more than transformers owned by others, EPA believes that the required follow-up maintenance to correct leaks addresses this problem. In addition, owners of transformers that have high service costs to repair recurring leaks have an incentive to replace it as PCB-Contaminated Electrical Equipment or reclassify the transformer.

Servicing restrictions also apply as a condition to the use authorization for transformers that contain PCBs. Any servicing of a PCB Transformer (including rebuilding) that requires the removal of the transformer coil from the transformer casing is prohibited. This condition not only reduces the exposure risks to service personnel, but, also prevents the use of PCB Transformers beyond their normal operating lives. Other servicing conditions primarily prevent the further contamination of PCB-containing transformers.

EPA believes that authorizing the use of PCB-filled transformers and mineral oil-filled transformers containing PCBs according to the proposed conditions does not present an unreasonable risk for the following reasons:

a. If EPA did not authorize the use of PCBs in tranformers, it would cost the public and United States industry billions of dollars, primarily as a result of the disruption of electrical service. The resulting reduction in risk would not outweigh these substantial costs.

b. The required inspection and maintenance program reasonably reduces the exposure risks associated with the use of PCBs in PCB Transformers, and the servicing conditions prevent further PCB

contamination of transformers. These measures are much less costly than a ban on the use of PCBs in transformers would be.

c. Releases of PCBs to the environment and exposure to humans and biological organisms from mineral oil transformers are minimal. EPA estimates that these transformers contain less than 0.15 percent of all the PCBs used in transformers and release less than one half of a percent of these PCBs on an annual basis.

d. The costs associated with other risk reduction measures such as accelerated phase-out, reducing the PCB concentration in the dielectric fluid, or providing containment for transformers are not reasonable when compared to the potential reduction in release of PCBs achieved if any of these measures were required for all PCB Transformers.

Several comments said that even though phase-out, containment, and reduction of PCB concentration are not warranted as regulatory requirements, each of these measures might be cost-effective in individual situations on a voluntary basis. In fact, some companies have already initiated such efforts because of benefits in their specific cases. EPA agrees with these comments, and, to recognize the positive effect those actions have in reducing risks from PCB Transformers, this rule provides for less frequent inspections for those PCB Transformers. For a PCB Transformer with secondary containment capacity of at least 100 percent of the transformer's total dielectric fluid volume, or a PCB Transformer which contains less than 60,000 ppm (6 percent) PCBs, a visual inspection is required only once every 12 months. Secondary containment of at least 100 percent of the transformer's total dielectric fluid volume will contain virtually all releases of PCBs from the transformer. Draining, flushing, and refilling a PCB Transformer reduces the amount of PCBs in a transformer by a factor of between 10 and 15, leaving a residual PCB concentration of between 30,000 and 80,000 ppm. EPA believes that, for transformers with these kinds of reduced risks, it is reasonable to inspect no more often then once per year. EPA chose a 60,000 ppm PCB concentration cutoff because, on the basis of numerous demonstrations, it has been shown to be a consistently achievable concentration after one carefully conducted fluid replacement for a PCB Transformer. Additional incentives (such as reduced or eliminated use, servicing and disposal requirements) exist in the PCB rules which encourage further reduction in PCB concentration to 50 and 500 ppm.

Several persons commented that the visual inspection required by this final rule could pose an electrical shock hazard to unqualified personnel. It has always been EPA's intent that the extent of a visual inspection should be only as complete as safely possible. This will vary, depending on the physical constraints of each transformer installation. No visual inspection should require an electrical shutdown of the transformer being inspected. Transformers that require electrical isolation (shutdown) to be inspected thoroughly (due to safety precautions, enclosures, etc.) may be inspected as completely as possible without disconnecting the transformer. Future inspections should then be coordinated when possible with equipment outages from the power system so that more thorough inspections can be completed.

The proposed rule did not specify the time period in which quarterly and annual inspections must take place. Several comments suggested that inspection frequencies should be flexible in order to take advantage of equipment outages which can occur at irregular intervals. EPA agrees with this comment and, for quarterly inspections, has added regulatory language that allows inspections for leaks of dielectric fluid to take place any time during the quarter (i.e. January–March, April–June, July–September, and October–December) as long as there is a minimum of 30 days between inspections. Inspections may also take place any time during the calendar year for annual inspections as long as there is a minimum of 180 days between inspections.

Follow-up maintenance activities to repair a leak are required only if corrective action is necessary to stop the leak. EPA recognizes that some small leaks of dielectric fluid are unavoidable in the operation of a transformer and repairs are not always required to stop a leak. A leak of dielectric fluid which has run off or is about to run off the external surface of the transformer clearly needs repair to prevent further leaking. A leak of dielectric fluid which does not form a run or drip, i.e. a sweat or a weep, and does not require repair to prevent further leaking, only requires proper cleanup. All leaks must be cleaned up within 48 hours and the PCB-contaminated materials properly disposed of in a timely fashion. If dielectric fluid is actively leaking, the leak must be contained to prevent the PCBs from entering the environment and inspected daily to verify that the leak is being contained until the leak is corrected.

This final rule requires recordkeeping of each PCB Transformer's inspection and maintenance history. This requirement will assist companies in the operation of their inspection and maintenance program and help management determine that the company is meeting the conditions of the use authorization. These records may be maintained in any form or format as long as all of the required information is available (in hard copy) upon request by EPA. These records must be maintained for at least three years after disposing of the transformer and should be coordinated with other records required for the transformer under the PCB rule (formerly 40 CFR 761.45 and correctly recodified in this document to 40 CFR 761.180). This time period was reduced from the five-year requirement in the proposed rule. Several comments indicated that five years was excessive and resulted in unnecessary costs. EPA has reduced the period in response to these comments and because it believes that the three-year time period provides a sufficient history for EPA to monitor compliance with a reasonable interval between compliance inspections.

Because reporting of PCB spills are mandated under § 311 of the Clean Water Act for discharges to navigable waters, and under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund) for discharges to other media, this rule does not require any additional reporting.

D. Use of Capacitors

This section on the use of capacitors analyzes only those capacitors that do not pose an exposure risk to food or feed. Analysis of the exposure risks associated with equipment that poses an exposure risk to food or feed is found in section E.

Large PCB Capacitors (PCB Large High Voltage and PCB Large Low Voltage) are also used extensively by electric utilities and other industries. Large PCB Capacitors contain more than 3 pounds of dielectric fluid and are commonly used to improve the voltage and power factor of the electric power system. Virtually all capacitors (large and small) manufactured prior to 1978 were filled with PCB fluid at a concentration near 100 percent. Capacitors manufactured after 1978 did not use PCB dielectric fluid.

EPA estimates that there were 2,800,000 utility-owned large PCB

Capacitors in service at the end of 1981. EPA also estimates that the total population of in-service nonutility-owned large PCB Capacitors was 490,000 at the end of 1981.

Large PCB Capacitors are located within fenced electrical substations, within buildings, and on utility poles throughout the service areas of electric utilities. Many comments pointed out that there are significant differences between the risk posed by Large Capacitors depending upon their location. Therefore, this final rule recognizes the widespread distribution of large PCB Capacitors and distinguishes two different exposure risk categories by capacitor location. The two categories are: (1) capacitors used within restricted-access electrical substations or used in contained and restricted-access indoor installations, and (2) capacitors used in all other locations (primarily in electric utility distribution systems).

1. *Magnitude of exposure.* Large PCB Capacitors used within restricted-access electrical substations and in contained and restricted-access indoor locations pose comparatively low exposure risk. A restricted-access electrical substation is a fenced or walled-in facility that is restricted to public access and used in the transmission or distribution of electric power. Releases of PCBs from capacitors in these substations beyond the confines of the substation are extremely limited. In most cases, PCBs become intimately bound to the gravel and soil and very little PCBs evaporate or dissolve or are driven off by rain. In a report by Dr. Donald Mackay titled Environmental Pathways of Polychlorinated Biphenyls (Volume IV of the EEI/USWAG study), Dr. Mackay calculates that the likely extent of evaporation from a "typical" pure PCB spill into soil is 0.16 percent per day and the dissolution rate of a spill into water is typically a factor of 100 slower than evaporation. Many comments indicated that substations are inspected at regular intervals, often at intervals of one week or less. Because of these frequent inspections and because there is evidence that PCBs usually migrate slowly from a spill within a substation, EPA concludes that a very high percentage of all PCB releases from capacitors in these locations can be identified and cleaned up quickly with very little risk of exposure to humans or the environment. EPA estimates that 41,073 pounds of PCBs could be released from large PCB Capacitors in Restricted-access electrical substations.

Similarly, certain other facilities, described in this rule as contained and restricted-access indoor installations, also present limited exposure risk potential. An installation meeting this description has a roof, walls, and floors that will contain any release of PCBs within the indoor installation. This type of installation also prevents rain from reaching the large PCB capacitors and has controlled access to these PCB capacitors. A building which prevents PCB releases from escaping, including escape through drains or expansion joints, would be acceptable. This type of contained and restricted-access installation allows proper cleanup of PCBs with very little exposure to humans or the environment. EPA estimates that 25,728 pounds of PCBs could be released from large PCB capacitors in contained and restricted-access indoor installations.

The second category of large PCB Capacitor locations represents all other locations. The capacitors in this category are primarily located on utility poles throughout electric service areas. The exposure risks associated with those capacitors vary due to their widespread use. These capacitor installations are used in residential neighborhoods, industrial areas, rural areas, public areas (such as shopping centers, schools, etc.), and even near waterways. The capacitors, because of their locations, have a greater potential for exposing humans, animals, and the environment during their use than other large PCB Capacitors. EPA estimates that without any risk reduction measures these capacitors could release as many as 730,110 pounds of PCBs during their remaining useful life.

2. *Benefits of PCBs and availability of substitutes.* The electrical properties of PCBs are so well suited as a dielectric fluid for capacitors that no other fluids were commonly used in capacitors prior to 1978. Since 1978, electric utilities and other industries have been installing non-PCB Capacitors with no apparent replacement or operational problems.

Under this final rule EPA estimates that 1.087 million large PCB Capacitors (or 108.7 million KVAR, assuming an average size of 100 KVAR) will require removal due to the accelerated phase-out requirements. (KVAR is the abbreviation for reactive kilovolt-ampers, which is a standard power rating for capacitors.) EPA assumes that companies will take one year to plan for the phase-out and five years to implement it. Considering the additional capacitors that will require replacement due to failure or obsolescence, EPA estimates that a peak annual power capacitor manufacturing capacity of 29 million KVAR (about 145,000 200-KVAR units) will be required to meet the total demand for replacements. EPA's estimates for the demand for new power capacitor applications (unrelated to any demand for replacements) range from 9.7 million KVAR to 20.3 million KVAR per year. Therefore, the maximum total annual demand for power capacitors should be between 38.7 and 49.3 million KVAR under this final rule.

In a survey of domestic capacitor manufacturers by the National Electrical Manufacturers Association in response to this rulemaking, four respondents indicated that production could be increased 65 percent by 1983 or earlier. With this increase in production, the total annual power capacitor manufacturing capacity would be 47.85 million KVAR.

According to these estimates, manufacturing capacity is adequate for companies to comply with the requirement to phase out these capacitors over the next six years. The derivation of the estimates and a further discussion of the methodology used to arrive at this conclusion is found in the Regulatory Impact Analysis prepared for this final rule.

3. *Economic and environmental impacts of regulatory requirements.* The economic impact of this final rule was calculated in terms of the lost economic value associated with removing PCB Capacitors before the end of their useful lives. EPA estimates this cost to be $135.8 million. EPA estimates that the net present value of the phase-out cost for the electric utility industry is only 0.05 percent of the 1979 net value of assets in electric plant nationally.

It should be noted that the direct costs of the regulatory requirements for large PCB Capacitors do not include the energy savings associated with the use of more efficient replacement capacitors. This savings is very significant for capacitors that were manufactured using paper insulation (approximately pre-1966). The Regulatory Impact Analysis prepared for this final rule estimates that the payback period for capacitors with paper insulation is approximately 11 years, assuming that the capacitors are in use 50 percent of the time.

By removing large PCB Capacitors before the end of their useful service lives it prevents the release of PCBs during the remaining years of use. EPA estimates that this final rule avoids an estimated 572,000 pounds of PCBs from release from large PCB Capacitors that doe not pose an exposure risk to food and feed. A more complete discussion of the costs and benefits associated with the regulatory requirements is presented

in the Regulatory Impact Analysis prepared for this final rule.

4. *Findings on the use of capacitors.* The proposed rule discussed whether the use of PCBs in capacitors should continue and the options EPA considered to reduce the risks from the use of PCBs in capacitors. The proposed rule authorized the use of capacitors for ten years. Several comments suggested that capacitors should be categorized on the basis of difference in potential for exposure. These differences arise because of differences in the accessability of the capacitor location and differences in the degree of containment of any PCB spills or leaks which may occur. EPA agrees with these comments and has created categories based on the comments. Other comments urged EPA to eliminate the phase-out requirement altogether. With respect to those capacitors in the category with comparatively low exposure potential, EPA agrees with these comments and has eliminated the phase-out, but with respect to other capacitors, EPA has concluded that the cost of a six-year phase-out is reasonable because of the large quantity of PCBs release which will be avoided and because of the comparatively high potential for exposure in these locations.

This final rule prohibits the use of large PCB Capacitors after October 1, 1988, unless the capacitors are used in restricted-access outdoor electrical substations, or in contained and, restricted-access indoor installations. EPA finds that the more limited potential for exposure in these restricted-access locations warrants authorizing their use for the remainder of their useful lives.

A very large number of comments stated that the benefits of an inspection program for capacitors do not outweigh the costs. In most cases, large releases of PCBs from capacitors (ruptures) happen very suddenly as a result of a large amount of energy entering the capacitor in a very short time period. Inspections of in-service capacitors cannot detect characteristics which indicate a capacitor's potential to release PCBs. EPA agrees that the effectiveness of an inspection program for large PCB Capacitors is very limited in preventing future releases of PCBs. Therefore, this final rule eliminates the proposed requirement that large PCB Capacitors must be inspected for leaks of dielectric fluid on a quarterly basis.

An inspection program can speed the detection and cleanup of PCBs in cases where a release has already occurred and the release has not been detected or cleaned up. However, EPA has learned from comments on the proposed rule that for large capacitors located on distribution systems that a utility company or other owner is almost always notified of PCB releases by the public or company personnel within a much shorter time period than the proposed quarterly inspection frequency. Furthermore, large PCB Capacitors located in electrical substations and indoors are typically inspected by company crews more frequently than the proposed quarterly inspection due to existing concerns for system efficiency and stability.

EPA finds that authorizing the use of PCBs in capacitors not posing an exposure risk to food or feed, under the required conditions, does not present an unreasonable risk for the following reasons:

a. The use of PCBs in large PCB Capacitors that are located in restricted-access indoor installations for their remaining useful lives is such that PCBs released from these capacitors are readily identified and cleaned up with limited exposure potential to humans and the environment.

b. The required six-year phase-out period for large PCB Capacitors should prevent more than 500,000 pounds of PCBs from entering the environment and some unknown percentage of that quantity from entering the food chain. This time period also avoids any disruption of electrical service.

c. The cost of the phase-out requirement is reasonable when compared to the large amount of PCBs it prevents from entering the environment and the costs and benefits of alternative risk reduction measures. This cost is only $237 per pound of PCB release avoided.

5. *Small capacitors.* PCB Small Capacitors contain less than 3 pounds of dielectric fluid. These capacitors commonly contain between 0.1 and 0.6 pounds of PCBs and are used in fluouresent light ballasts, household appliances, and industrial equipment. In most applications, the equipment containing the small capacitor in its circuitry cannot function without it. In 1976, an EPA study estimated that 870 million small capacitors, containing 275 million pounds of PCBs, were in use in a wide variety of applications. Today, EPA estimates that approximately 500 million of these small capacitors are still in use. EPA calculated this figure assuming that 10 percent of these capacitors are removed from service annually due to equipment or appliance obsolescence and capacitor failure.

No data has been submitted to EPA which indicate that small capacitors have a different propensity to leak than other capacitors. Additionally, no comments have identified any practical and cost-effective use restrictions regarding the use of PCB Small Capacitors. Because of the widespread and diverse nature of their use and the small amount of PCBs contained within each individual small capacitor, all regulatory approaches targeted at controlling releases from these capacitors are very expensive when compared to the potential quantity of PCBs kept from the environment. Consequently, EPA has not identified a reasonable cost-effective regulatory alternative that would result in significantly reducing the risks associated with the remaining PCB Small Capacitors in service. Therefore, this final rule does not require any restrictions regarding the use of PCBs in small capacitors. However, EPA encourages commercial and industrial firms that use and dispose of large quantities of PCB Small Capacitors to establish voluntarily a collection and disposal program that results in waste capacitors being disposed of in an EPA-approved incinerator or chemical waste landfill. Such programs could be expanded to encourage voluntary collection and disposal of PCB Small Capacitors from the public and other firms. Any firm which desires more information about identifying and disposing of PCB Small Capacitors should contact the nearest EPA regional office or the Industry Assistance Office at 800-424-9065 for assistance.

Since these capacitors contain small quantities of dielectric fluid and significant amounts of absorbant material such as paper, and because many of these capacitors are encapsulated, PCBs are rarely released from these capacitors during their use or from the equipment using the capacitors. Therefore, exposure risks to humans, food, feed, water, or the environment from the use of these capacitors are low. In conclusion, EPA finds that the use of small capacitors containing PCBs is not unreasonable because their use provides society with the benefits from the use of millions of pieces of electronic equipment and consumer products, it avoids billions of dollars in replacement costs, and there appear to be no practical, cost-effective risk reduction measures.

E. Use of PCB Transformers, Capacitors, and Electromagnets That Pose an Exposure Risk to Human Food and Animal Feed

EPA estimates that at the end of 1979 there were approximately 47,500 large PCB Capacitors and 9,580 PCB Transformers in use on the premises of

food and feed facilities. Because of comments that much of this equipment never posed an exposure risk to food or feed and that, for much of the rest of it, steps have been taken to eliminate the risk, EPA estimates that ten percent of the equipment used on the premises of food and feed facilities poses an exposure risk to food or feed products.

Since publication of the proposed rule, EPA has received a comment that indicated that electromagnets designed to contain PCBs are still in use over grain elevators. EPA was unaware that this use still existed at the time of the proposed rule. In 1979, EPA estimated that a total of 200 PCB-filled electromagnets were in use with an unknown percentage of these in use in coal operations.

1. *Magnitude of exposure.* Human food and animal feed represent EPA's greatest concern for exposure because of the increased health risks associated with the ingestion of PCBs. Electrical equipment filled with askarel dielectric fluid presents the greatest exposure risks to food and feed due to the high concentrations and large quantities of PCBs. Any leakage from such equipment has the potential to cause severe harm. One incident, involving a single PCB Transformer, occurred at a plant manufacturing animal feed ingredients. The contaminated feed was fed to poultry and livestock, resulting in millions of dollars of damages. Implicated food and feed products were distributed to nineteen states and two foreign countries.

2. *Benefits of PCBs and availability of substitutes.* The benefits of using PCBs and the availability of substitutes for PCBs in transformers and capacitors that pose an exposure risk to food and feed are identical to those discussed for PCB Transformers and PCB Capacitors. The benefit of using PCBs in electromagnets is the safety provided by the fire resistant properties of the PCBs. The substitutes for PCBs in transformers are also available and suitable for use in electromagnets.

3. *Economic and environmental impacts of regulatory requirements.* The food contamination incident previously described which involved a single PCB Transformer demonstrates that the cost to society of a PCB spill affecting food or feed can be more than one million dollars per pound of PCBs spilled. Therefore, only a very small reduction in PCB leakage is needed for a risk reduction measure to be cost effective in food and feed facilities. The Regulatory Impact Analysis contains an examination of the cost effectiveness of different accelerated phase-out time periods and inspection program frequencies.

The impact of replacing the affected PCB Transformers and large PCB Capacitors in food and feed facilities is estimated to be $16.04 million, and the impact of replacing the affected electromagnets is $0.38 million. These estimates assume that ten percent of the PCB Transformers and Capacitors used by the food and feed industry pose an exposure risk to food and feed and that ten percent of the estimated 200 PCB-filled electromagnets in service in 1979 pose an exposure risk to food and feed.

4. *Findings on the use of PCBs posing an exposure risk to food and feed.* In the proposed rule, EPA found that it was reasonable to require weekly inspection of all PCB Transformers and Large PCB Capacitors that pose an exposure risk to food or feed and to prohibit the use of these capacitors after October 1, 1992. Several comments suggested that EPA categorize equipment according to differences in the risk of exposure. Other comments expressed concern that EPA was proposing to allow indefinite use of PCBs in transformers in the areas of greatest risk. After further analysis of the cost-effectiveness of various accelerated phase-out periods and consideration of these comments, EPA has decided to establish a prohibition on the use of PCB Transformers, PCB Large Capacitors, and PCB-filled electromagnets that pose an exposure risk to food and feed. This prohibition becomes effective in three years for PCB Transformers and PCB-filled electromagnets and in six years for PCB Large Capacitors. The cost-effectiveness calculations are contained in the Regulatory Impact Analysis.

Other comments urged EPA not to prohibit the use of any electrical equipment in food or feed establishments, but to rely on the effectiveness of an inspection and maintenance program. EPA did not choose this option because, although an inspection and maintenance program does have benefits, the need to avoid contamination of human food with PCBs justifies the imposition of additional protective measures.

The three-year time period for transformers and electromagnets is based on an estimated one year to analyze the specifics of the individual situation, to choose the method to be used to eliminate the exposure risk to food or feed, and to develop a plan for compliance with the regulation and two years to implement the plan. Given the comparatively small amount of equipment involved, EPA believes that this period of time is sufficient for affected persons to avoid logistical difficulties.

The six-year time period for PCB Large Capacitors is based on an estimated one year for planning for compliance and five years for implementation of the plan. EPA decided not to shorten this period any further for these capacitors because the quantity of PCBs involved is much less than the quantity of PCBs in transformers posing this exposure risk and because the cost per pound of preventing PCB release was higher than for the transformers.

Prohibiting the use of PCB-containing equipment in a location that poses an exposure risk to food or feed represents the most effective risk reduction measure of the alternatives EPA has considered. Persons subject to this requirement actually have several choices as to how to comply. They may replace the equipment. They may provide secondary containment so that the exposure risk to food or feed is eliminated. They may relocate the equipment to a location which does not present an exposure risk. For transformers and electromagnets, they may service the equipment to reduce the PCB concentration to less than 500 ppm.

Many comments agreed with EPA's finding in the proposed rule that a weekly inspection frequency is not unreasonable primarily because it is an effective risk reduction measure for equipment such as transformers and electromagnets and because of the large exposure risks associated with the use of PCB Transformers and PCB-filled electromagnets near food or feed. As discussed in an earlier section of this preamble, the effectiveness of an inspection program for capacitors is very limited and in most cases ruptures of this equipment are identified in shorter time frames than the inspection frequency. Therefore, this final rule eliminates the proposed weekly inspection requirement for Large PCB Capacitors and retains this program for PCB Transformers and PCB-filled electromagnets.

Most comments in response to the proposed rule did not support any use restrictions for mineral oil-filled electrical equipment posing an exposure risk to food or feed since very little of this equipment is used in food and feed facilities. In most cases, mineral oil equipment contains very little PCBs, and it is expensive to test all the equipment to determine which items actually contains PCBs. Therefore, EPA made no changes in the proposed authorization for this equipment which allows its use without restriction.

Other comments in response to the proposed rule recommended that EPA include in the final rule clarifications that were issued under the Interim Measures Program. These clarifications have been incorporated into the final rule where appropriate and are discussed in this preamble.

The proposed rule required special inspection procedures for transformers which are in a location that pose a risk of exposure to human food or animal feed. This exposure risk is presumed to exist in any facility manufacturing, processing, packaging, or holding human food or animal feed, or in any federally inspected meat, poultry product or egg product establishment. Because several comments pointed out a need for more specificity as to which equipment is subject to inspection requirements, EPA has further clarified the definition of posing an exposure risk to food or feed in this rule under 40 CFR 761.3(11).

This new definition clarifies that PCB Items pose an exposure risk to food or feed only when there exists a potential pathway for PCBs discharged from the item to contaminate food or feed products. Food and feed covered by this definition includes items regulated by USDA and FDA as food or feed including additives. Food and feed is excluded from this definition if it is used or stored in private residences by the public because a very small amount of food would be potentially exposed in a single incident in a private residence and because the enforcement of this requirement in private residences would place a very large demand on EPA enforcement resources. This definition, does cover food and feed that are held in all other facilities including grocery stores, restaurants, warehouses, barns, bins, sheds, silos, and other structures, and in feedlots, open fields, and animal grazing areas.

Comments also encouraged the clarification of the responsibilities between users and owners of PCB-containing electrical equipment that pose an exposure risk to food and feed. As in the Interim Measures Program it is the responsibility of the user of a PCB Transformer to fulfill all appropriate inspection, recordkeeping and maintenance requirements until the owner is notified that the transformer may pose an exposure risk to food or feed, or until the owner has other knowledge indicating that the transformer may pose an exposure risk to food or feed. It is the ultimate responsibility of the owner of the PCB-containing electrical equipment to determine if it poses an exposure risk to food or feed. Although users of PCB-Transformers, PCB capacitors, and PCB-filled electromagnets are not responsible for phasing-out any of this equipment, users should contact the owner if they feel that this equipment poses an exposure risk to food or feed. In any event, the user still has responsibility under other Federal laws to insure that food and feed distributed in commerce are not contaminated.

In the **Federal Register** of May 9, 1980, EPA proposed a rule amendment which would have prohibited the use of PCB Items in facilities manufacturing, processing, or storing fertilizers or agricultural pesticides. EPA received comment upon this proposed rule and, on May 6, 1981, in light of the court-ordered rulemaking on the use of PCBs in electrical equipment, EPA put that proposed rule in abeyance. Because the promulgation of this final rule deals with PCBs that pose an exposure risk to food or feed, EPA has decided not to issue a final rule from the May 9, 1980 proposed rule. The final rule on the use of PCBs in electrical equipment does not recognize agricultural pesticides and fertilizers as food or feed additive or require additional provisions for PCB Items which pose an exposure risk to agricultural pesticides and fertilizers. The rulemaking record from the May 9, 1980, proposed amendment has been incorporated into the record for this final rule.

F. Use and Servicing of Voltage Regulators, Switches (Including Sectionalizers and Motor Starters), and Electromagnets

Voltage regulators and switches (including sectionalizers and motor starters) are used by electric utilities and industry to control, transmit, and distribute electric power efficiently. Almost all of this electrical equipment is mineral oil-filled and not designed to contain PCB dielectric fluid. Very few items are contaminated with greater than 500 ppm PCBs. Electromagnets are primarily used over conveyor belts to remove iron from non-magnetic commodities and are not commonly used by the electric utility industry. Electromagnets designed to contain PCBs are used in areas such as coal mines, coal preparation plants, and coal-fired generating stations. PCB-filled electromagnets that pose an exposure risk to food or feed are discussed in section E.

1. *Magnitude of exposure.* The total pounds of PCBs in oil-filled voltage regulators, switches, and electromagnets represent less than 0.01 percent of the total PCBs in-service in electrical equipment. EPA estimates from data in the rulemaking record that the annual leakage of oil-filled voltage regulators and switches would amount to a release of approximately 85 pounds of PCBs per year.

Leaks of dielectric fluid from oil-filled electrical equipment have the potential for exposing humans or the environment to low concentrations (parts per million) of PCBs because some of this equipment is used in the Nation's electrical distribution system which is located near consumers of electric power. In addition, releases of PCBs anywhere in the environment have the potential to reach aquatic systems, build up in the food chain, and ultimately result in human exposure. Leaks of PCBs from electromagnets used in coal-handling systems, however, present negligible risks since the coal in these systems is handled automatically and eventually is burned in combustion devices (such as high efficiency boilers) capable of destroying PCBs.

2. *Benefits of PCBs and availability of substitutes.* The PCBs in almost all of this electrical equipment serve no specific purpose since the PCBs are in such small concentrations and are the result of contamination from servicing and manufacturing activities. For this equipment, the PCBs provide no significant benefits. For any equipment designed to contain PCBs, the use of PCBs in the equipment provides the same safeguards against fire hazards as that described for transformers.

The availability of substitutes was discussed in the proposed rule.

3. *Economic and environmental impacts of regulatory requirements.* This final rule reduces the amount of worker and environmental exposure associated with servicing (including rebuilding) this equipment. This rule also prevents further PCB contamination of this equipment.

The economic impacts are discussed in further detail in the proposed rule and the Regulatory Impact Analysis prepared for this final rule. There are no significant changes from the analysis done for the proposed rule.

4. *Findings on the use and servicing of this electrical equipment.* The proposed rule contained an authorization for the use of PCBs in voltage regulators, switches (including sectionalizers and motor starters), and electromagnets for their remaining useful lives with no use restrictions. It also restricted servicing activities in order to prevent this equipment from being further contaminated with PCBs and to reduce PCB exposure of servicing personnel and the environment during these activities. Comments in response to the proposed rule did not raise any new

issues that warranted changes in the proposal. Therefore, EPA reaffirms its proposed findings in this final rule.

EPA finds that authorizing the use of PCBs in voltage regulators, switches (including sectionalizers and motor starters), and electromagnets with the servicing conditions does not present an unreasonable risk for the following reasons:

a. Allowing this use of PCBs to continue avoids disruption of electric service and the costs associated with a prohibition. (This reason does not apply to electromagnets.)

b. There is little PCB contamination of this oil-filled equipment and very small amounts of PCBs are expected to be released annually.

c. EPA does not believe that the cost associated with restrictions regarding the use of this equipment is justified by the small PCB exposure that would be prevented by such measures.

d. The servicing restrictions will prevent easily avoidable human exposure to PCBs.

This rule authorizes the servicing of electrical equipment not previously mentioned in the PCB rule, such as voltage regulators and switches. Persons who service this equipment should note that any processing and distribution in commerce of PCBs for servicing this equipment requires an exemption from the July 1, 1979 ban of these activities. Procedures for submitting a petition for exemption from the PCB processing and distribution in commerce prohibitions under section 6(e)(3)(B) of TSCA are described in 40 CFR Part 750. (44 FR 31558, May 31, 1979).

C. Use and Servicing of Circuit Breakers, Reclosers, and Cable

Circuit breakers, reclosures, and cable are used primarily by electric utilities to protect other equipment in the electric power system from damage caused by electrical faults and to transmit electric power. Circuit breakers, reclosers, and cable are types of oil-filled electrical equipment generally not designed to contain PCBs. However, available data indicate that a small percentage of this electrical equipment contains PCBs resulting from past servicing and manufacturing practices.

1. *Magnitude of exposure.* Although approximately 26.3 percent of all oil-filled circuit breakers can be expected to leak during an average year, this could amount to a release of only 50.88 pounds of PCBs, according to the EEI/USWAG study. This same study indicates that releases of dielectric fluid from reclosers could amount to 6.64 pounds of PCBs per year. As with other oil-filled electrical equipment, leaks of dielectric fluid have the potential for exposing humans and the environment to low concentrations of PCBs because of the equipment's location throughout electric power system service areas.

2. *Benefits of PCBs and availability of substitutes.* Both the benefits and availability of substitutes for PCBs in circuit breakers, reclosers, and cable are the same as that discussed for other mineral oil-filled equipment (transformers, voltage regulators, switches, etc.).

3. *Economic and environmental impacts of regulatory requirements.* Since this electrical equipment may be assumed to contain less than 50 ppm PCBs, the economic and environmental impact of the servicing and disposal requirements is minimal and difficult to measure. These requirements would only apply to equipment that is known to contain PCBs in excess of 50 ppm (e.g. from test results). Additional discussion of the costs and benefits associated with the regulatory requirements is found in the proposed rule and the Regulatory Impact Analysis prepared for this final rule. There are no significant changes from the analysis done for the proposed rule.

4. *Findings on the use and servicing of this electrical equipment.* The proposed rule contained an authorization, with servicing conditions, which would have allowed the use of PCBs in circuit breakers and reclosers for the remaining useful life of this equipment. No comments contained data which would warrant changing this part of the proposal.

The proposed rule also authorized the use of oil-filled cable and contained a requirement that oil-filled cable must be assumed to contain between 50 and 500 ppm PCBs if the concentration were unknown. This requirement was included in the proposal because there was virtually no data in the rulemaking record on PCB concentrations in cable. Comments in response to the proposed rule contained additional data on the PCBs concentrations of oil-filled cable, indicating that virtually none of the cable is contaminated in excess of 50 ppm. Therefore, this final rule allows the assumption that oil-filled cable contains less than 50 ppm PCBs if the actual concentration is unknown.

EPA authorizes the use and servicing of PCBs in circuit breakers, reclosers, and cable for the remainder of their useful lives, according to the servicing restrictions of § 761.30(m)(1). These servicing conditions prevent further PCB contamination of equipment containing less than 50 ppm PCBs. The disposal requirements of 40 CFR 761.60 and the servicing requirements of 40 CFR 761.30(h) apply to any oil-filled circuit breaker, recloser, or cable found to contain 50 ppm or greater PCBs. EPA believes that this use authorization with servicing conditions does not present an unreasonable risk for the following reasons:

a. Allowing this use of PCBs to continue avoids disruption of electric service and the costs associated with a prohibition.

b. There is little PCB contamination of this oil-filled equipment and very small amounts of PCBs are expected to be released annually.

c. EPA does not believe that the cost associated with restrictions regarding the use of this equipment is justified by the small PCB exposure that would be prevented by such measures.

d. The servicing restrictions will prevent easily avoidable human exposure to PCBs and further contamination of this equipment.

VI. Other Amendments to the PCB Rule

A. PCB-Contaminated Electrical Equipment

Because this rulemaking has identified electrical equipment containing PCBs that was not previously recognized in the PCB rule, changes have been made to definitions presented in the rule. This final rule deletes the definition of a "PCB-Contaminated Transformer" (40 CFR 761.3(z)) and substitutes a definition titled "PCB-Contaminated Electrical Equipment."

"PCB-Contaminated Electrical Equipment" means any electrical equipment that contains at least 50 ppm, but less than 500 ppm PCB. Electrical equipment includes transformers (including those used on railway locomotives and self-propelled cars), capacitors, voltage regulators, electromagnets, cable, circuit breakers, reclosers, and switches (including sectionalizers and motor starters).

Although the use of PCBs in certain electrical equipment is authorized regardless of PCB concentration, the disposal requirements of the May 1979 PCB rule make certain distinctions on the basis of PCB concentration. That is, different disposal requirements apply to PCBs at concentrations of 500 ppm or greater and at concentrations between 50 and 500 ppm. The definition of PCB-Contaminated Electrical Equipment was developed in order to refer to the electrical equipment that contains between 50 and 500 ppm PCBs.

Prior to publication of the proposed rule, EPA had received data regarding the actual PCB concentrations in different types of electrical equipment.

These data indicate that approximately 12 to 14 percent of oil-filled transformers, voltage regulators, and switches contain PCB concentrations of 50 ppm or greater, but PCB concentrations greater than 500 ppm in this equipment are rare, estimated to occur in less than 2 percent of the equipment. Because the contamination was caused by unintentional manufacturing and servicing practices, it is impossible to determine for certain which pieces of equipment are contaminated without testing them all. EPA estimates the cost of such testing to be over two billion dollars, based on a total of cost of $100 per test. Based on these data, EPA requires that all oil-filled transformers, voltage regulators, switches, and electromagnets must be assumed to be PCB-Contaminated Electrical Equipment unless the oil has been tested, or otherwise verified, and found not to contain between 50 and 500 ppm PCBs. In other words, if the actual PCB concentration of any oil-filled transformer, voltage regulator, switch, or electromagnet is unknown, the equipment must be assumed to contain more than 50 ppm PCBs and may be assumed to contain less than 500 ppm PCBs for purposes of servicing and disposing of this equipment. This will allow owners of this equipment to avoid the cost of testing if they choose.

Little monitoring data were available to EPA prior to publication of the proposed rule regarding the PCB concentration in oil-filled electromagnets. Comments on the proposed rule added little additional information. Because electromagnets use the same kind of oil and are serviced in the same manner as other types of oil-filled equipment, there is no reason to believe its PCB concentration would frequently exceed 500 ppm. Therefore, EPA requires that oil-filled electromagnets be included in the category of PCB-Contaminated Electrical Equipment so that they must be assumed to have a PCB concentration between 50 and 500 ppm if the concentration is unknown.

Data in the rulemaking record indicate that less than two percent of oil-filled circuit breakers, reclosers, and cable are contaminated with PCB concentrations of 50 ppm or greater. EPA estimates that it would cost approximately forty million dollars to indentify all of the circuit breakers, reclosers, and cable whose PCB contamination exceeds 50 ppm. Because the cost of either testing all the equipment or treating it as contaminated in excess of 50 ppm is high relative to the number of pieces of equipment that are likely to contain greater than 50 ppm, EPA allows that oil-filled circuit breakers, reclosers and cable need not be classified as PCB-Contaminated Electrical Equipment if the PCB concentration is unknown.

B. Clarification of Existing Definitions

This final rule retains, as proposed, changes to the definitions of "Large High Voltage Capacitor", "Large Low Voltage Capacitor", "Small Capacitor", and PCB Article (40 CFR 761.3(d) (1), (2), and (3) and 761.3(t), respectively). No comments on the proposed rule raised any new issues regarding these changes.

C. Distribution in Commerce

EPA in its April 22, 1982 Federal Register notice proposed changes to the list of PCB activities it found to be in a totally enclosed manner, due to new information submitted prior to the proposal. This final rule is identical to the proposal. To assure that PCBs are not released from electrical equipment being distributed in commerce under the provisions of section 6(e)(3)(C), EPA finds the distribution in commerce of only intact and nonleaking transformers (including transformers used on railway locomotives and self-propelled cars), capacitors, electromagnets, voltage regulators, circuit breakers, reclosers, switches (including sectionalizers and switches), and cable to be totally enclosed activities. Coupled with 40 CFR 761.30(c)(1), this will restrict the applicability of section 6(e)(3)(C) to intact, nonleaking equipment. Persons wishing to distribute in commerce electrical equipment which is not intact and nonleaking must apply for an exemption from the ban on distribution in commerce, using the exemption procedures found in 40 CFR Part 750.

D. Disposal Requirements

Since this rulemaking has identified uses of PCB-containing electrical equipment not recognized in the earlier PCB regulations, changes have been made to the disposal requirements for PCBs and PCB Items. The major difference between this final rule and the proposal is that language specifying the extent of cleanup required for a PCB spill has been deleted.

1. *Mineral oil dielectric fluid.* This final rule allows mineral oil dielectric fluid from any type of PCB-Contaminated Electrical Equipment to be disposed following the requirements of 40 CFR 761.60(a)(2). All mineral oil from transformers, electromagnets, voltage regulators, and switches is subject to the disposal requirements of this section, unless the oil has been tested (or otherwise verified) and found to contain less than 50 ppm PCBs. No comments on this proposed change affected EPA's conclusions regarding the degree of contamination of this equipment.

2. *PCB Items.* The proposed rule established disposal requirements for PCB-Contaminated Electrical Equipment. This equipment must be drained of all free flowing liquid, and the liquid must be disposed of under 40 CFR 761.60(a)(2). The proposed rule also regulated the disposal of PCB Articles with a PCB concentration of 500 ppm or more under 40 CFR 761.60(b)(5), but did not regulate the disposition of a PCB Article containing less than 500 ppm, once all free flowing liquid has been drained from the PCB Article. Comments received generally agreed with these requirements, and this final rule retains them as proposed. However, one comment stated that some capacitors have been found to contain between 50 and 500 ppm PCBs. These comments pointed out that capacitors are not designed to be drained of dielectric fluid and would have to be punctured or cut open. Puncturing or cutting open a Large PCB Capacitor poses a potential PCB exposure risk to workers and the environment due to the sudden release of internal pressure that may have built up in a failed capacitor. In order to discourage this potentially hazardous activity, this final rule requires disposal of capacitors containing between 50 and 500 ppm PCBs in an incinerator that complies with § 761.70 or in a chemical waste landfill that complies with § 761.75.

Although this rule does not require testing of mineral oil dielectric fluid for PCB concentration, some people may choose to do so. In order to reduce the costs associated with testing for PCB concentrations in mineral oil dielectric fluid, this rule allows, as proposed, common container collection ("batch testing") of mineral oil dielectric fluid from all electrical equipment containing mineral oil dielectric fluid (see 40 CFR 761.60(g)(1)). Common container collection is permitted so that mineral oil from multiple sources can be collected and tested without requiring a separate test of each individual piece of electrical equipment to determine disposal options. However, in order to prevent persons from using dilution to circumvent the disposal rules, dielectric fluid from oil-filled circuit breakers, reclosers, or cable, collected in a common container with untested dielectric fluid from other oil-filled equipment must be assumed to contain at least 50 ppm PCBs.

3. *Spills and leaks.* The proposed rule clarified the definition of disposal by

including leaks in the definition. The final rule refines this clarification. A number of comments stated that it was unfair to charge a party with unauthorized disposal when PCBs are spilled or leaked during authorized use of electrical equipment but prompt cleanup is initiated. It is not the Agency's intention that § 761.3(h) and § 761.60(d) should be applied in this way. Where the responsible party shows that: (1) The spill, leak, or uncontrolled discharge occurred during authorized use of electrical equipment and (2) adequate cleanup measures were initiated within 48 hours, the Agency will not charge the party with a disposal violation.

The proposal also contained requirements for cleanup of PCB contamination resulting from spills, leaks, and other uncontrolled discharges of PCBs. Comments in response to these provisions varied. Some comments stated that a requirement for level of cleanup should be set, but that cleanup to a concentration of 50 ppm was always appropriate. Other comments expressed concern about setting any specific requirements for level of cleanup at this time and about how these levels would be determined in the field. Still others approved of the standards set in the proposed rule.

The Agency has decided not to include language regarding the required level of cleanup in this final rule. A part of § 761.60(d)(2) (formerly § 761.10(d)(2)), which was sometimes construed as setting a required level of cleanup has been deleted.

4. *Storage for disposal.* The storage for disposal of nonleaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Transformers on pallets next to qualified storage facilities was permitted until January 1, 1983, under the May 31, 1979, PCB rule (formerly 40 CFR 761.42(c)(2)). This provision was designed to relieve the burden on PCB storage facilities until EPA-approved incineration facilities were commercially available.

A number of comments pointed out that if EPA were going to require accelerated phase-out of capacitors, there would be additional storage needed for phased-out equipment awaiting disposal. After considering these comments, EPA has decided to allow this type of storage for disposal for nonleaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Electrical Equipment after January 1, 1983.

The May 31, 1979, PCB rule did not envision an accelerated phase-out for certain PCB Transformers and large PCB Capacitors or the use of PCB-containing oil-filled electrical equipment other than transformers. In order to lessen the burden on existing storage facilities and reduce the need to build additional facilities, this final rule allows this type of storage for disposal to continue indefinitely, according to the provisions of 40 CFR 761.65(c)(2).

The May 1979 rule exempted PCB Small Capacitors from the storage requirements. In the April 22, 1982, proposed rule, this exemption (§ 761.10(b)(6)) was printed erroneously. This error made it appear that EPA was proposing to exempt PCB-Contaminated Electrical Equipment from storage requirements instead of PCB Small Capacitors. EPA did not intend to propose any change in the language of this paragraph. The introductory text to § 761.60(b)(6) in this final rule corrects this error.

E. Reclassification of Electrical Equipment Containing PCBs

The May 1979 rule prohibits rebuilding of PCB Transformers and allows the PCB concentration in electrical equipment to be reduced for purposes of reclassifying the equipment. The proposed rule retained these provisions. Under the provisions for reclassification, the equipment must be put back into service for three months before testing the PCB concentration. Comments on the proposed rule pointed out that the proposed servicing restrictions prohibit reclassification of PCB Transformers which have failed electrically because failed transformers can not be put back into service unless rebuilt. In response to this comment, EPA has added a provision to the final rule which allows the Assistant Administrator for Pesticides and Toxic Substances to approve a method of simulating the loading conditions associated with in-service use. To apply for approval of any method which uses conditions other than in-service use, a letter should be sent to the Assistant Administrator for Pesticides and Toxic Substances (TS-794), Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460. Responses to any applications for approval will be in writing. All applications should show that alternative conditions result in equivalent or greater release of PCBs from the internal components of the equipment into the dielectric fluid as three months of in-service use.

This final rule also clarifies the definition of in-service use for transformers by specifying a minimum dielectric fluid temperature of 50° C. This temperature has been shown experimentally to be associated with a condition of light electrical loading and to cause release of PCBs from the internal components of the transformer into the dielectric fluid. This clarification also provides guidance as to what constitutes adequate in-service use.

VII. Executive Order 12291

Under Executive Order 12291, issued February 17, 1981, EPA must judge whether a rule is a "major rule" and, therefore, subject to the requirement that a Regulatory Impact Analysis be prepared. EPA has determined that this amendment to the PCB rule is not a major rule as the term is defined in section 1(b) of the Executive Order.

EPA has concluded that the amendment is not "major" under the criteria of section 1(b) because the annual effect of the rule on the economy will be less than $100 million; it will not cause a major increase in costs or prices for any sector of the economy or for any geographic region; and it will not result in any significant adverse effects on competition, employment, investment, productivity, or innovation or on the ability of United States enterprises to compete with foreign enterprises in domestic or foreign markets. In fact, this rule allows uses of PCBs in electrical equipment to continue that would otherwise be prohibited by section 6(e) of TSCA. This rule avoids the severe disruption of electric service to the public and industry that would occur if the use were prohibited. It also greatly reduces the economic impact that would result from a requirement to replace the equipment as soon as possible. However, although this proposal is not a major rule, EPA has prepared a Regulatory Impact Analysis using the guidance in the Executive Order to the extent possible within the time constraints of the court's order.

This final rule amendment was submitted to the Office of Management and Budget (OMB) prior to publication as required by the Executive Order.

VIII. Regulatory Flexibility Act

Section 604 of the Regulatory Flexibility Act, 5 U.S.C. 604, requires EPA to prepare and make available for comment a "regulatory flexibility analysis" in connection with any rulemaking for which there is a statutory requirement that a general notice of proposed rulemaking be published. The "regulatory flexibility analysis" describes the effect of a final rule on small business entities.

Section 605(b) of the Regulatory Flexibility Act, however, provides that

section 604 of the Act "shall not apply to any proposed or final rule if the head of the Agency certifies that the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."

The effect of this final rule is to avoid severe disruption of electric service to industry and the public and to reduce the costs of complying with TSCA. In general, this rule will reduce the burden on small businesses that would otherwise be encountered if an immediate ban on PCB-containing electrical equipment were to take effect. If an immediate ban were imposed, large costs would be incurred by all producers and users of electricity, including small businesses.

Since the actual distribution of electrical equipment ownership is unknown, EPA estimated the effect of the capacitor phase-out on different groups of utilities, including the rural electric cooperatives, using number of customers as a predictor of number of capacitors owned by the utility group. Four groups were analyzed: private investor-owned utilities, local public utilities, rural electric cooperatives, and federally owned utilities. The rural electric cooperative group would be expected to include the most small utilities. Using a number of measures of impact, none of the groups analyzed, including the rural electric cooperatives, would be significantly affected by this final rule. EPA estimated that the total costs of the capacitor phase-out for rural electric cooperatives would be $13.97 million, or 0.072 percent of the net value of assets in electric plant in 1979. The maximum annual increase in capitalized costs as a percent of net investment would be 0.31 percent for the rural electric cooperatives. The maximum revenue requirement increase over the phase-out period for the rural electric cooperatives would be 0.084 percent of 1979 revenues.

The impact of the regulation on the food and feed industries should also be very small since most of the industry has voluntarily moved or replaced their PCB Transformers and Large Capacitors. Further, the impact on small food and feed companies will be negligible since most small firms do not own their own transformers and capacitors.

Since the effect of this rule avoids the economic impact associated with a disruption of electric service and based on the regulatory analysis which indicates that there is a net benefit from the rule, I certify that this rule will not have a significant economic impact on a substantial number of small entities. Therefore, a "regulatory flexibility analysis" is not required and will not be prepared for this rulemaking.

VIII. Paperwork Reduction Act

The Paperwork Reduction Act of 1980 (PRA), 44 U.S.C. 3501 *et seq.*, authorizes the Director of the OMB to review certain information collection requests by Federal agencies. EPA has determined that the recordkeeping requirements set out in 40 CFR 761.30 constitute a "collection of information," as defined in 44 U.S.C 3502(4), making these requirements subject to the terms of the PRA.

In 40 CFR 761.30(a) EPA grants authorizations for the use of PCB-containing transformers provided that records are kept which indicate when the equipment was inspected for leaks, whether any leaks were found, and what action it took if any leaks were found. The person is required to keep the records until three years after disposing of the equipment, and upon request, to make them available to EPA for inspection. This requirement has been reduced from the five-year period that was in the proposal.

These recordkeeping requirements minimize paperwork burden and are designed to obtain only information necessary to assure that companies are complying with the rule. By eliminating the inspection requirements for capacitors, the paperwork burden of this final rule has been reduced to less than six percent of the burden for the requirements in the proposed rule.

This final rule amendment has been forwarded to the Director of OMB for review under the terms of the PRA. OMB has assigned the following control number to this final rule: 2070-0003.

IX. Official Record of Rulemaking

In accordance with the requirements of section 19(a)(3)(E) of TSCA, EPA is publishing the following list of documents, which constitute the record of this rulemaking. However, public comments, the transcript of the rulemaking hearing, or submissions made at the rulemaking hearing or in connection with it will not be listed because these documents are exempt from Federal Register listing under section 19(a)(3). A full list of these materials is available on request by contacting the Industry Assistance Office (see listing under "For Further Information Contact").

A. Previous Rulemaking Records

1. Official Rulemaking Record from "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions Rule" published in the Federal Register of May 31, 1979. (44 FR 31514).

2. Official Rulemaking Record from "Polychlorinated Biphenyls (PCBs); Proposed Restrictions on Use at Agricultural Pesticide and Fertilizer Facilities," published in the Federal Register of May 9, 1980. (45 FR 30989).

B. Federal Register Notices

3. 44 FR 31514. May 31, 1979. USEPA. "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions."

4. 45 FR 14232. March 5, 1980. USEPA. "Polychlorinated Biphenyls (PCBs); Request for Information on PCB Transformers."

5. 46 FR 16096. March 10, 1981. USEPA. "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions: Use in Electrical Equipment; Court Order on Inspection and Maintenance."

6. 46 FR 16096, March 10, 1981. USEPA. "Polychlorinated Biphenyls (PCBs); Use in Electrical Equipment."

7. 46 FR 25411, May 6, 1981. USEPA. "Polychlorinated Biphenyls (PCBs); Proposed Restrictions on Use at Agricultural Pesticide and Fertilizer Facilities; Abeyance of Proposed Rule Amendment."

8. 46 FR 27614, May 20, 1981. USEPA. "Polychlorinated Biphenyls (PCBs); Use in Electrical Equipment; Interim Measures Program."

9. 47 FR 17426, April 22, 1982. USEPA. "Polychlorinated Biphenyls (PCBs); Use in Electrical Equipment."

C. Support Documents

10. USEPA, OTS, "Regulatory Impact Analysis—for the Proposed PCB-Containing Electrical Equipment Rulemaking."

11. USEPA, OTS "Regulatory Impact Analysis of the Use Rule for PCB-Containing Electrical Equipment."

12. USEPA, OTS "Response to Comments on Health Effects of PCBs submitted by the Chemical Manufacturers Association and the Edison Electric Institute."

13. USEPA, OTS "Support Document for the Electrical Equipment Use Rule—Response to Comments."

D. Reports

14. Chemical Manufacturers Association. "Summary of the Health Effects of PCBs." Prepared by Ecology and the Environment, Inc.

15. Edison Electric Institute and Utilities Solid Waste Activities Group. "Comments and Studies on the Use of Polychlorinated Biphenyls (PCBs) in Response to an Order of the U.S. Court of Appeals for the District of Columbia Circuit."

Vol I.—Executive Summary and Integrated Comments (02/12/82)

Vol. II.—Potential Health Effects in the Human from Exposure to Polychlorinated Biphenyls and Related Impurities (2/12/82) Prepared under contract to Drill, Friess, Hays, Loomis & Shaffer, Inc.

Vol. III.—Report of the Study on PCBs in Equipment Owned by the Electric Utility Industry (02/12/82). Prepared under contract to Resource Planning Corp.

Vol. IV.—Environmental Pathways of Polychlorinated Biphenyls (02/12/82). Prepared by Donald MacKay, Dept. of Chemical Eng. and Applied Chemistry, Inst. of Environmental Studies, Univ. of Toronto, CA.

16. Edison Electric Institute, "Initial Cost Impact to Utility Companies of the Regulation of PCBs in Food-Related Industries." (December 1980) Prepared by Resource Planning Corp.

17. Edison Electric Institute and Utilities Solid Waste Activities Group, "Preliminary Findings of the Study of PCBs in Equipment Owned by the Electric Utilities Industry, Task I and II" (10/29/81). Prepared by Resource Planning Corp.

18. Electric Power Research Institute, "Equilibrium Study of PCBs Between Transformer Oil and Transformer Solid Materials" (December 3, 1981). Prepared by RTE Corp.

19. ENSCO, "Emission Testing During Incineration of PCBs at Energy Systems Co." (December 1981). Prepared by TRW, Inc., Env. Div.

20. National Electric Manufacturers Association, "Potential Health Effects in the Human from Exposure to Polychlorinated Biphenyls (PCBs) and Related Impurities" (01/25/82). Prepared by Drill, Friess, Hays, Loomis & Shaffer, Inc.

21. Northeast Utilities Service Co., "Capacitor Protective Schemes Investigated by Northeast Utilities." Presented to EPRI PCB Seminar, Dallas, TX (December 1–3, 1981).

22. Rollins Env. Services, "The PCB Incineration Test Made by Rollins Environmental Services (TX), Inc. at Deer Park, TX." (November 10–12, 1981).

23. USEPA, OTS, "Summary Data on Substitutes for Polycholorinated Biphenyls (PCBs)" (February, 1981). Prepared by SRI International.

24. USEPA, OTS, "Assessment of the Use of Selected Replacement Fluids for PCBs in Electrical Equipment" (March 1979). Prepared by Versar, Inc.

25. USEPA, Reg. 6, AHMD, Solid Waste Division, "Incineration of PCBs Summary of Approval Actions—Energy Systems Co. (ENSCO), El Dorado Park, TX" (02/06/81).

26. USEPA, WH, Marine Protection, "Marine Protection, Research, and Sanctuaries Act (Incineration at Sea) Permit."

X. Statutory Authority

Under section 6(e) of TSCA (15 U.S.C. 2605), the Administrator may by rule authorize the manufacture, processing, distribution in commerce or use (or any combination of such activities) of any PCBs in other than a totally enclosed manner if the Administrator finds that it will not present an unreasonable risk of injury to health or the environment. The Administrator also has authority to amend or modify the PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibition Rule (40 CFR Part 761), published in the Federal Register of May 31, 1979. (44 FR 31514).

List of Subjects in 40 CFR Part 761

Hazardous materials, Labeling, Polychlorinated biphenyls, Reporting and recordkeeping requirements, Environmental protection.

Dated: August 18, 1982.

John W. Hernandez,

Acting Administrator.

Therefore, 40 CFR Part 761 is amended as follows:

PART 761—POLYCHLORINATED BIPHENYLS (PCBs) MANUFACTURING, PROCESSING, DISTRIBUTION IN COMMERCE, AND USE PROHIBITIONS

1. In § 761.3, paragraphs (d)(1), (2), and (3), (h), (t), and (z) are revised and paragraph (ll) is added to read as follows:

§ 761.3 Definitions.

* * * * *

(d) * * *

(1) "Small Capacitor" means a capacitor which contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.).

(2) "Large High Voltage Capacitor" means a capacitor which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates at 2000 volts (a.c. or d.c.) or above.

(3) "Large Low Voltage Capacitor" means a capacitor which contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates below 2000 volts (a.c. or d.c.).

* * * * *

(h) "Disposal" means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.

* * * * *

(t) "PCB Article" means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commerical purpose separate from that of the PCB Article.

* * * * *

(z) "PCB-Contaminated Electrical Equipment" means any electrical equipment, including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers, and cable whose PCB concentration is unknown must be assumed to be PCB-Contaminated Electrical Equipment. (See § 761.30(a) and (h) for provisions permitting reclassification of electrical equipment containing 500 ppm or greater PCBs to PCB-Contaminated Electrical Equipment).

* * * * *

(ll) "Posing an Exposure Risk to Food or Feed" means being in any location where human food or animal feed products could be exposed to PCBs released from a PCB Item. A PCB Item poses an exposure risk to food or feed if PCBs released in any way from the PCB Item have a potential pathway to human food or animal feed. EPA considers human food and animal feed to include items regulated by the U.S. Department of Agriculture or the Food and Drug Administration as human food or animal feed; this includes additives. Food or feed is excluded from this definition if it is used or stored in private homes.

* * * * *

2. The introductory text of § 761.20 is revised to read as follows:

§ 761.20 Prohibitions.

Except as authorized in § 761.30 the activities listed in paragraphs (a) and (d) of this section are prohibited pursuant to section 6(e)(2) of TSCA. The requirements set forth in paragraphs (b) and (c) of this section concerning export and import of PCBs for purposes of

disposal and PCB Items for purposes of disposal are established pursuant to section 6(e)(1) of TSCA. Subject to any exemptions granted pursuant to section 6(e)(3)(B) of TSCA, the activities listed in paragraphs (b) and (c) of this section are prohibited pursuant to section 6(e)(3)(A) of TSCA. In addition, the Administrator hereby finds, under the authority of section 12(a)(2) of TSCA, that the manufacture, processing, and distribution in commerce of PCBs and PCB Items for export from the United States presents an unreasonable risk of injury to health within the United States. This finding is based upon the well-documented human health and environmental hazard of PCB exposure: the high probability of human and environmental exposure to PCBs and PCB Items from manufacturing, processing, or distribution activities; the potential hazard of PCB exposure posed by the transportation of PCBs or PCB Items within the United States; and the evidence that contamination of the environment by PCBs is spread far beyond the areas where they are used. In addition, the Administrator hereby finds that any exposure of human beings or the environment to PCBs as measured or detected by any scientifically acceptable analytical method is a significant exposure, as defined in § 761.3(dd). Section 761.3(hh) and TSCA section 6(e)(2)(C) define the term totally enclosed manner as "any manner which will ensure that any exposure of human beings or the environment to a polychlorinated biphenyl will be insignificant * * *." Since any exposure to PCBs is found to be a significant exposure, a totally enclosed manner is a manner that results in no exposure of humans or the environment to PCBs. The following activities are considered totally enclosed: distribution in commerce of intact, nonleaking electrical equipment such as transformers (including transformers used in railway locomotives and self-propelled cars), capacitors, electromagnets, voltage regulators, switches (including sectionalizers and motor starters), circuit breakers, reclosers, and cable that contain PCBs at any concentration and processing and distribution in commerce of PCB Equipment containing an intact, nonleaking PCB Capacitor. See paragraph (c) (1) of this section for provisions allowing the distribution in commerce of PCBs and PCB Items.

* * * * *

3. Section 761.30 is amended by revising paragraphs (a) and (h) and adding paragraphs (l) and (m) to read as follows:

§ 761.30 Authorizations.

* * * * *

(a) *Use in and servicing of transformers (other than railroad transformers).* PCBs at any concentration may be used in transformers (other than transformers for railroad locomotives and self-propelled railroad cars) and may be used for purposes of servicing including rebuilding these transformers for the remainder of their useful lives, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1985, the use and storage for reuse of PCB Transformers that pose an exposure risk to food or feed is prohibited.

(ii) A visual inspection of each PCB Transformer (as defined in § 761.3(y)) in use or stored for reuse shall be performed at least once every three months. These inspections may take place any time during the three month periods; January–March, April–June, July–September, and October–December as long as there is a minimum of 30 days between inspections. The visual inspection must include investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspections will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected.

(iii) If a PCB Transformer is found to have a leak which results in any quantity of PCBs running off or about to run off the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. In all cases any leaking material must be cleaned up and properly disposed of according to disposal requirements of § 761.60. Cleanup of the released PCBs must be initiated as soon as possible, but in no case later than 48 hours of its discovery. Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure of humans or the environment and inspected daily to verify containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment measures.

(iv) Records of inspection and maintenance history shall be maintained at least 3 years after disposing of the transformer and shall be made available for inspection, upon request, by EPA (OMB Control Number: 2070–0003). Such records shall contain the following information for each PCB Transformer:

(A) Its location.

(B) The date of each visual inspection and the date that a leak was discovered, if different from the inspection date.

(C) The person performing the inspection.

(D) The location of any leak(s).

(E) An estimate of the amount of dielectric fluid released from any leak.

(F) The date of any cleanup, containment, repair, or replacement.

(G) A description of any cleanup, containment, or repair performed.

(H) The results of any containment and daily inspection required for uncorrected active leaks.

(v) A reduced visual inspection frequency of at least once every 12 months applies to PCB Transformers that utilize either of the following risk reduction measures. These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections.

(A) a PCB Transformer which has impervious, undrained, secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained, or

(B) A PCB Transformer which has been tested and found to contain less than 60,000 ppm PCBs (after three months of inservice use if the transformer has been serviced for purposes of reducing the PCB concentration).

(vi) An increased visual inspection frequency of at least once every week applies to any PCB Transformer in use or stored for reuse which poses an exposure risk to food or feed. The user of a PCB Transformer posing an exposure risk to food or feed is responsible for the inspection, recordkeeping, and maintenance requirements under this section until the user notifies the owner that the transformer may pose an exposure risk to food or feed. Following such notification, it is the owner's ultimate responsibility to determine whether the PCB Transformer poses an exposure risk to food or feed.

(2) *Servicing conditions.* (i) Transformers classified as PCB-Contaminated Electrical Equipment (as defined in § 761.3(z)) may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.

(ii) Any servicing (including rebuilding) of PCB Transformers (as defined in § 761.3(y)) that requires the removal of the transformer coil from the transformer casing is prohibited. PCB Transformers may be serviced

(including topping off) with dielectric fluid at any PCB concentration.

(iii) PCBs removed during any servicing activity must be captured and either reused as dielectric fluid or disposed of in accordance with the requirements of § 761.60. PCBs from PCB Transformers must not be mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.

(iv) Regardless of its PCB concentration, dielectric fluids containing less than 500 ppm PCB that are mixed with fluids that contain 500 ppm or greater PCB must not be used as dielectric fluid in any electrical equipment. The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements in § 761.70.

(v) A PCB Transformer may be converted to PCB-Contaminated Electrical Equipment or to a non-PCB Transformer and a transformer that is classified as PCB-Contaminated Electrical Equipment may be reclassified to a non-PCB Transformer by draining, refilling and/or otherwise servicing the transformer. In order to reclassify, the transformer's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-Contaminated Electrical Equipment) or less than 50 ppm PCB (for conversion to a non-PCB Transfomer) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer. In-service means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to at least 50° Centigrade. The Assistant Administrator may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of in-service use. All PCBs removed from transformers for purposes of reducing PCB concentrations are subject to the disposal requirements of § 761.60.

(vi) Any dielectric fluid containing 50 ppm or greater PCB used for servicing transformers must be stored in accordance with the storage for disposal requirements of § 761.65.

(vii) Processing and distribution in commerce of PCBs for purposes of servicing transformers is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).

* * * * *

(h) *Use in and servicing of electromagnets, switches and voltage regulators.* PCBs at any concentration may be used in electromagnets, switches (including sectionalizers and motor starters), and voltage regulators and may be used for purposes of servicing this equipment (including rebuilding) for the remainder of their useful lives, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1985, the use and storage for reuse of any electromagnet which poses an exposure risk to food or feed is prohibited if the electromagnet contains greater tha 500 ppm PCBs.

(ii) A visual inspection of each electromagnet subject to paragraph (h)(1)(i) shall be performed at least once every week according to the conditions contained in § 761.30(a)(1)(iii) and (iv).

(2) *Servicing conditions.* (i) Servicing (including rebuilding) any electromagnet, switch, or voltage regulator with a PCB concentration of 500 ppm or greater which requires the removal and rework of the internal components is prohibited.

(ii) Electromagnets, switches, and voltage regulators classified as PCB-Contaminated Electrical Equipment (as defined in § 761.3(z)) may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.

(iii) PCBs removed during any servicing activity must be captured and either reused as dielectric fluid or disposed of in accordance with the requirements of § 761.60. PCBs from electromagnets switches, and voltage regulators with a PCB concentration of at least 500 ppm must not be mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.

(iv) Regardless of its PCB (concentration, dielectric fluids containing less than 500 ppm PCB) that are mixed with fluids that contain 500 ppm or greater PCB must not be used as dielectric fluid in any electrical equipment. The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements of § 761.70.

(v) An electromagnet, switch or voltage regulator with a PCB concentration of at least 500 ppm may be converted to PCB-Contaminated Electrical Equipment or to a non-PCB classification and PCB-Contaminated Electrical Equipment may be reclassified to a non-PCB classification by draining, refilling and/or otherwise servicing the equipment. In order to be reclassified, the equipment's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-Contaminated Electrical Equipment) or less than 50 ppm PCB (for conversion to a non-PCB classification) after a minimum of three months of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the equipment. In-service use means the equipment is used electrically under loaded conditions. The Assistant Administrator may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of in-service use. All PCBs removed from this equipment for purposes of reducing PCB concentrations are subject to the disposal requirements of § 761.60.

(vi) Any dielectric fluid containing 50 ppm or greater PCB used for servicing electromagnets, switches, or voltage regulators must be stored in accordance with the storage for disposal requirements of § 761.65.

(vii) Processing and distribution in commerce of PCBs for purposes of servicing electromagnets, switches or voltage regulators is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).

* * * * *

(l) *Use in capacitors.* PCBs at any concentration may be used in capacitors, subject to the following conditions:

(1) *Use conditions.* (i) After October 1, 1988, the use and storage for reuse of PCB Large High Voltage Capacitors and PCB Large Low Voltage Capacitors which pose an exposure risk to food or feed is prohibited.

(ii) After October 1, 1988, the use of PCB Large High Voltage Capacitors and PCB Large Low Voltage Capacitors is prohibited unless the capacitor is used within a restricted-access electrical substation or in a contained and restricted-access indoor installation. A restricted-access electrical substation is an outdoor, fenced or walled-in facility that restricts public access and is used in the transmission or distribution of electric power. A contained and restricted-access indoor installation does not have public access and has an adequate roof, walls, and floor to contain any release of PCBs within the indoor location.

(2) [Reserved]

(m) *Use in and servicing of circuit breakers, reclosers and cable.* PCBs at any concentration may be used in circuit breakers, reclosers, and cable and may be used for purposes of servicing this electrical equipment (including rebuilding) for the remainder of their useful lives, subject to the following conditions:

(1) *Servicing conditions.* (i) Circuit breakers, reclosers, and cable may be serviced (including rebuilding) only with dielectric fluid containing less than 50 ppm PCB.

(ii) Any circuit breaker, recloser or cable found to contain at least 50 ppm PCBs may be serviced only in accordance with the conditions contained in 40 CFR 761.30(h)(2).

(2) [Reserved]

4. In § 761.40, paragraphs (a)(2) and (c)(1) are revised to read as follows:

§ 761.40 Marking requirements.

(a) • • •

(2) PCB Transformers at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked. [Marking of PCB-Contaminated Electrical Equipment is not required];

• • • • •

(c) • • •

(1) All PCB Transformers not marked under paragraph (a) of this section [marking of PCB-Contaminated Electrical Equipment is not required];

• • • • •

5. The heading for Subpart D is revised to read as follows:

Subpart D—Storage and Disposal

6. In § 761.60 paragraph (b)(1)(ii) is removed and reserved and the introductory text of paragraph (a)(2), paragraph (b)(2)(i), the introductory text of paragraph (b)(2)(iii), paragraph (b)(4) and (5), paragraph (d), and paragraph (g)(1) are revised and paragraph (b)(6) is added to read as follows:

§ 761.60 Disposal requirements.

(a) • • •

(2) Mineral oil dielectric fluid from PCB-Contaminated Electrical Equipment containing a PCB concentration of 50 ppm or greater, but less than 500 ppm, must be disposed of in one of the following:

• • • • •

(b) • • •

(2) *PCB Capacitors.* (i) The disposal of any capacitor shall comply with all requirements of this subpart unless it is known from label or nameplate information, manufacturer's literature (including documented communications with the manufacturer), or chemical analysis that the capacitor does not contain PCBs.

• • • • •

(iii) Any PCB Large High or Low Voltage Capacitor which contains 500 ppm or greater PCBs, owned by any person, shall be disposed of in accordance with either of the following:

• • • • •

(4) *PCB-Contaminated Electrical Equipment.* All PCB-Contaminated Electrical Equipment except capacitors shall be disposed of by draining all free flowing liquid from the electrical equipment and disposing of the liquid in accordance with paragraph (a)(2) or (3) of this section. The disposal of the drained electrical equipment is not regulated by this rule. Capacitors that contain between 50 and 500 ppm PCBs shall be disposed of in an incinerator that complies with § 761.70 or in a chemical waste landfill that complies with § 761.75.

(5) *Other PCB Articles.* (i) PCB Articles with a PCB concentration of 500 ppm or greater must be disposed of:

(A) In an incinerator that complies with § 761.70; or

(B) In a chemical waste landfill that complies with § 761.75, provided that all free-flowing liquid PCBs have been thoroughly drained from any articles before the articles are placed in the chemical waste landfill and that the drained liquids are disposed of in an incinerator that complies with § 761.70.

(ii) PCB Articles with a PCB concentration between 50 and 500 ppm must be disposed of by draining all free flowing liquid from the article and disposing of the liquid in accordance with paragraph (a)(2) or (3) of this section. The disposal of the drained article is not regulated by this rule.

(6) *Storage of PCB Articles.* Except for a PCB Article described in paragraph (b)(2)(ii) of this section and hydraulic machines that comply with the municipal solid waste disposal provisions described in paragraph (b)(3) of this section, any PCB Article shall be stored in accordance with § 761.65 prior to disposal.

• • • • •

(d) *Spills.* (1) Spills, leaks, and other uncontrolled discharges of PCBs constitute the disposal of PCBs.

(2) PCBs resulting from the clean-up and removal of spills, leaks, or other uncontrolled discharges, must be stored and disposed of in accordance with paragraph (a) of this section.

(3) These regulations do not exempt any person from any actions or liability under other statutory authorities, including but not limited to the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

• • • • •

(g) *Testing procedures.* (1) Owners or users of mineral oil dielectric fluid electrical equipment may use the following procedures to determine the concentration of PCBs in the dielectric fluid:

(i) Dielectric fluid removed from mineral oil dielectric fluid electrical equipment may be collected in a common container, provided that no other chemical substances or mixtures are added to the container. This common container option does not permit dilution of the collected oil. Mineral oil that is assumed or known to contain at least 50 ppm PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the common container. If dielectric fluid from untested, oil-filled circuit breakers, reclosers, or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain less than 50 ppm PCBs.

(ii) For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine the PCB concentration, except that if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements of this subpart. For purposes of this subparagraph, representative samples of mineral oil dielectric fluid are either samples taken in accordance with American Society of Testing and Materials method D-923 or samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container.

• • • • •

7. In § 761.65, paragraph (c)(2) is revised to read as follows:

§ 761.65 Storage for disposal.

• • • • •

(c)* • •

(2) Non-leaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Electrical Equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage facility that meets the requirements of paragraph (b) of this section. PCB-Contaminated Electrical Equipment that has been drained of free flowing dielectric fluid is not subject to the storage provisions of § 761.65. Storage under this subparagraph will be permitted only when the storage facility

has immediately available unfilled storage space equal to 10 percent of the volume of capacitors and equipment stored outside the facility. The capacitors and equipment temporarily stored outside the facility shall be checked for leaks weekly.

. . . . .

§ 761.45 Correctly designated as § 761.180.

8. Section 761.45 which was incorrectly redesignated as § 761.80 in the **Federal Register** of May 6, 1982 (47 FR 19527) is correctly redesignated as § 761.180 in Subpart J.

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