§ 7.12 [Amended]

15. In § 7.12, Gulf Islands National Seashore, paragraph (b)(1)(i) is amended by revising the cross-reference to "§ 4.19(b)" to read "§ 4.10(b)" and paragraph (b)(2)(v)(B) is amended by removing the cross-references to "§§ 4.12, 4.19(e), 4.20 and 4.21" and adding in place thereof a cross-reference to read "§ 4.10(c)(3)".

§ 7.13 [Amended]

16. In § 7.13, Yellowstone National Park, by removing paragraph (a), redesignating paragraph (b)(2) as paragraph (a), removing paragraph (b)(1), and redesignating the introductory text of paragraph (b)(3) and paragraphs (b)(3)(i) and (b)(3)(ii) as the introductory text of paragraph (b) and paragraphs (b)(1) and (b)(2).

§ 7.15 [Amended]

17. In § 7.15, Shenandoah National Park, by removing paragraphs (e) and (f).

§ 7.16 [Amended]

18. In § 7.16, Yosemite National Park, by removing and reserving paragraphs (d), (f) and (g).

§ 7.20 [Amended]

19. In § 7.20, Fire Island National Seashore, by amending paragraph (a)(7)(iv) by removing the cross-references to "§§ 4.12, 4.19(e), 4.20 and 4.21" and adding in place thereof a cross-reference to read "§ 4.10(c)(3)".

§ 7.29 [Amended]

20. In § 7.29, Gateway National Recreation Area, by amending paragraph (a) by revising the cross-reference to "§ 4.19(b)" to read "§ 4.10(b)".

§ 7.34 [Amended]

21. In § 7.34, Blue Ridge Parkway, by removing paragraph (k) and redesignating paragraph (l) as (k).

§ 7.41 [Amended]

22. In § 7.41, Big Bend National Park, by removing paragraph (d).

§ 7.43 [Amended]

23. In § 7.43, Natchez Trace Parkway, by removing paragraphs (c)(5) (iii) and (iv) and redesignating paragraph (c)(5)(v) as paragraph (c)(5)(iii).

§ 7.57 [Amended]

24. In § 7.57, Lake Meredith Recreation Area, by removing paragraph (a)(2), by removing only the paragraph designation (1), not the text, of paragraph (a)(1) and revising paragraph (b) to read as follows:

* * * * *

(b) *Safety Helmets.* The operator and each passenger of a motorcycle shall wear a safety helmet while riding on a motorcycle in an off-road area designated in paragraph (a) of this section.

* * * * *

§ 7.58 [Amended]

25. In § 7.58, Cape Hatteras National Seashore, by removing paragraph (b) and redesignating paragraph (c) as (b).

§ 7.65 [Amended]

26. In § 7.65, Assateague Island National Seashore, by amending paragraph (b)(2)(ii)(C) by removing the cross-references to "§§ 4.12, 4.19 and 4.21" and adding in place thereof a cross-reference to read "§ 4.10".

§ 7.75 [Amended]

27. In § 7.75, Padre Island National Seashore, by removing paragraphs (a)(1)(iii) and (a)(2)(v), by redesignating paragraphs (a)(1) (iv), (v) and (vi) as paragraphs (a)(1) (iii), (iv) and (v), and by amending paragraph (a)(1)(ii) by removing the cross-references to "§§ 4.12, 4.19, and 4.21" and adding in place thereof a cross-reference to § 4.10.

PART 34—EL PORTAL ADMINISTRATIVE SITE REGULATIONS

28. The authority citation for Part 34 continues to read as follows:

Authority: 16 U.S.C. 1, 3, 47–1, 460*l*–6a(e).

29. By revising paragraphs (a)(1) and (d) of § 34.5 to read as follows:

§ 34.5 Applicable regulations.

* * * * *

(a) *General provisions.* (1) 1.2(d) Applicability and scope; exception for administrative activities.

* * * * *

(d) *Vehicles and traffic safety.* (1) 4.2 State law applicable.

(2) 4.4 Report of motor vehicle accident.

(3) 4.10(a), (c)(1) and (c)(2) Travel on park roads and designated routes.

(4) 4.11 Load, weight and size limits.

(5) 4.12 Traffic control devices.

(6) 4.14 Open container of alcoholic beverage.

(7) 4.21 Speed limits.

(8) 4.22 Unsafe operation.

(9) 4.23 Operating under the influence of alcohol or drugs.

* * * * *

Dated: March 5, 1987.

P. Daniel Smith,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 87–6391 Filed 4–1–87; 8:45 am]

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April 2, 1987

Part III

Environmental Protection Agency

40 CFR Part 761

Polychlorinated Biphenyls Spill Cleanup Policy; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 761

[OPTS 62051; FRL 3179-1]

Polychlorinated Biphenyls Spill Cleanup Policy

AGENCY: Environmental Protection Agency (EPA).

ACTION: TSCA PCB spill cleanup policy rule.

SUMMARY: This rule presents the Toxic Substances Control Act (TSCA) policy for the cleanup of spilled polychlorinated biphenyls (PCBs). The TSCA policy establishes the measures which EPA considers to be adequate cleanup for the majority of situations where PCB contamination occurs during activities regulated under TSCA. While cleanup in accordance with this policy constitutes adequate cleanup of spills within the scope of this policy and creates a presumption against enforcement for penalties or further cleanup, EPA will not exercise enforcement abeyance for a disposal violation if the spill was the result of gross negligence or knowing violation.

Since this rule is a policy statement, it does not require notice and comment under the provisions of the Administrative Procedures Act. However, the Agency welcomes comment on and additional relevant information about the TSCA policy.

DATE: The TSCA policy shall be effective on May 4, 1987.

ADDRESSES: Information or comments for consideration by the Agency should be submitted in triplicate to: TSCA Public Information Office (TS-793), Office of Toxic Substances, Environmental Protection Agency, Rm. G004 NE Mall, 401 M St., SW., Washington, DC 20460.

Information and comments should include the docket number OPTS-62051. Information and comments received in connection with this document will be available for reviewing and copying from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays, in Rm. G004 NE Mall, Environmental Protection Agency, 401 M St., SW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Edward A. Klein, Director, TSCA Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-543, 401 M St., SW., Washington, DC 20460, (202-554-1404).

SUPPLEMENTARY INFORMATION:

Contents of Preamble

I. Background

EPA regulations controlling the disposal of PCBs, promulgated in the **Federal Register** of February 17, 1978 (43 FR 7150) and May 31, 1979 (44 FR 31514), broadly define the term "disposal" to encompass accidental as well as intentional releases of PCBs to the environment. Under these regulations, EPA considers intentional, as well as unintentional, spills, leaks and other uncontrolled discharges of PCBs at concentrations of 50 parts per million (ppm) or greater (defined by the concentration of PCBs in the material which spills) to be improper disposal of PCBs. For purposes of this discussion, and as defined in this policy under Unit III, the term "Spill" means spills, leaks, or other uncontrolled discharges of PCBs where the release results in any quantity of PCBs running off or about to run off the surface of the equipment or other PCB source, as well as the contamination resulting from those releases. When PCBs are improperly disposed of as a result of a spill of material containing 50 ppm or greater PCBs, EPA has the authority under section 17 of TSCA to compel persons to take actions to rectify damage or clean up contamination resulting from the spill.

Policies for the cleanup of PCB spills are currently established separately by each EPA regional office, and owners of spilled PCBs are required to meet these standards or face potential penalties under TSCA section 16 for improper disposal of PCBs. Once cleanup occurs to the standard set by the EPA regional offices, the material which has been cleaned, e.g., soil, metal, or equipment, may be processed, distributed in commerce and used (unless the regional office has placed restrictions on these other activities).

EPA standards for the cleanup of spilled PCBs have been established at the EPA regional office level since 1978. Each region sets PCB cleanup standards in the form of general guidelines and then applies the general guidelines on a case-by-case basis for specific spill situations. The general guidelines and their application to spills have differed among regions. For certain spill situations, regions have required cleanup to 50 ppm PCBs. In other spill situations, regions have required cleanup to preexisting background levels or the limit of detection of PCBs.

For PCB spill cleanup, EPA has already in place certain requirements for timely cleanup. In the final PCB Electrical Equipment Rule, published in the **Federal Register** of August 25, 1982 (47 FR 37342), EPA requires the initiation of PCB Transformer spill cleanup within 48 hours of spill discovery and defines disposal specifically to include leaks, spills, and other unintentional discharges of PCBs. However, the PCB Electrical Equipment Rule did not establish numerical criteria for PCB spill cleanup.

Most recently, the regions have applied the "lowest practicable level" guideline set up in the January 27, 1984, Administrative Law Judge decision on *General Electric* v. *U.S.E.P.A.* The Agency has, however, experienced several areas of difficulty in applying the "lowest practicable level" approach. First, the guideline is subject to, and has resulted in, disparate interpretations. Second, the term "lowest practicable level" cannot be easily applied by the regulated community without guidance from EPA. This can delay cleanup, and delays in cleanup can result in prolonged exposures to humans and more widespread environmental contamination. Finally, the owner of the PCBs may disagree with the EPA regional office's interpretation of the "lowest practicable level" standard. This may occur when the EPA regional office interpretation would require more stringent and costly measures than the owner believes are warranted. This too can delay complete cleanup, as the application of this guideline has, in fact, led to protracted Agency actions in some cases.

Although EPA did not finalize the proposed PCB spill cleanup policy in 1982, EPA has continued to evaluate available information on the risks posed by spilled PCBs and the costs associated with cleanup to various levels. EPA recognized that setting a nationwide TSCA PCB cleanup policy was a desirable goal and in the winter of 1984 EPA produced a draft TSCA Compliance Monitoring Program Policy covering PCB spill cleanup. Although the 1984 draft policy was never officially released, the members of the press and the public acquired and reviewed the draft policy. The Environmental Defense Fund (EDF), Natural Resources Defense Council (NRDC), Edison Electric Institute (EEI), Chemical Manufacturers Association (CMA), and National Electrical Manufacturers Association (NEMA), among others, were principal reviewers of the 1984 draft policy.

On May 17, 1985 EDF, NRDC, EEI, CMA, and NEMA submitted to EPA an alternative PCB spill cleanup policy for consideration by the Agency. EPA viewed the Consensus Agreement as a framework for completing its nationwide TSCA policy and evaluated the Consensus Agreement as a source of information in developing the Agency's own policy. The Agency and the Consensus Group shared two general principles about the appropriate framework for a nationwide PCB spills cleanup policy: That the policy should establish requirements designed to be effective in the large majority of spill situations; and that the risks posed by residual contamination (PCBs remaining after cleanup) vary depending upon the location of the spill and the potential for human exposures.

The requirements and standards in this policy are based upon the Agency's evaluation of the potential routes of exposure and potential risks associated with the more common types of PCB spills, as well as the costs associated with cleanup following these more common types of spills. Typical PCB spills involve the limited release of PCBs during the course of EPA-authorized activities such as: The use of electrical equipment (e.g., transformers and capacitors), the servicing of electrical equipment, and the storage for disposal of PCBs.

In establishing this cleanup policy for typical PCB spills, EPA recognizes that the risks posed by spills of PCBs vary, depending upon spill location and the amount of PCBs spilled. EPA recognized this earlier, in both the August 25, 1982 PCB Electrical Equipment Rule and the July 17, 1985 PCB Transformer Fires Rule. In these rules, EPA placed more stringent requirements on higher concentration PCBs located in areas where their release would pose greatest potential for significant human exposure.

This TSCA policy requires cleanup of PCBs to different levels depending upon spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of the PCBs initially spilled (i.e., PCBs spilled from PCB-contaminated equipment versus PCBs spilled from PCB equipment), and the nature and size of the population potentially at risk of exposure. Thus, this policy applies the most stringent requirements for PCB spill cleanup to areas where there is the greater potential for human exposures to spilled PCBs. The policy applies less stringent requirements for cleanup to PCB spills in areas where the type and degree of contact present lower potential exposures. Finally, even less stringent requirements apply to areas where there is little potential for any direct human exposures.

EPA firmly believes that by providing uniform, predictable requirements across the regions for the majority of spill situations, the nationwide policy will reduce the risks posed by spills of PCBs by encouraging rapid and effective cleanup and restoration of the site.

Unit VII of this document discusses available information and the rationale for the policy based upon that information. The policy reflects the Agency's best judgment in light of available information. However, the Agency welcomes comment on, and additional relevant information about, the TSCA policy as the Agency intends to continue to consider comments and evaluate information on the issue of PCB spills cleanup. Should the Agency's evaluation show that new information, or practical considerations associated with the implementation of the policy, warrant changes in, or modifications to, the policy, the policy will be revised accordingly by EPA headquarters. Thus, a public docket has been established to collect comments and information. The Agency believes that much of the data currently lacking can be developed only over a period of time and experience in implementing the policy. Therefore, EPA has not placed a time limit on the submission of comments.

Finally, the Agency intends to re-examine in 12 to 18 months the need to promulgate regulations requiring cleanup in accordance with Agency standards. The Agency's decision on the need to promulgate regulations will be based on two primary considerations. First, EPA will consider whether the issuance of the policy has in fact resulted in the application of consistent nationwide standards to PCB spill cleanup. Second, EPA will consider its experience in enforcing provisions of this policy with particular emphasis on the results of any litigation brought by the Agency for improper PCB disposal from leaks or spills.

II. Scope of the Policy

This policy establishes requirements for the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. The policy applies to spills which occur after the effective date of this policy.

Existing spills (spills which occurred prior to the effective date of this policy) are excluded from the scope of this policy for two reasons: (1) For old spills which have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill in accordance with requirements imposed by EPA through its regional offices, nor is this policy intended to interfere with ongoing litigation of enforcement actions which bring into issue PCB spills cleanup; and (2) EPA recognizes that old spills which are discovered after the effective date of this policy will require site-by-site evaluation because of the likelihood that the site involves more pervasive PCB contamination than fresh spills and because old spills are generally more difficult to clean up than fresh spills (particularly on porous surfaces such as concrete). Therefore, spills which occurred before the effective date of this policy are to be decontaminated to requirements established at the discretion of EPA, usually through its regional offices.

EPA expects the large majority of PCB spills subject to the TSCA PCB regulations to conform to the typical spill situations considered in developing this policy. However, this policy does exclude from application of the final numerical cleanup standards certain spill situations: Spills directly into surface water, drinking water, sewers, grazing lands, and vegetable gardens. While these spills are subject to the notification requirements and to measures designed to minimize further environmental contamination (see Unit IV.A.), final cleanup standards for these types of spills are to be established at the discretion of the EPA regional offices.

For all other spills, EPA generally expects the final decontamination standards of this policy to apply. Occasionally, some small percentage of spills covered by this policy may

warrant different or more stringent cleanup requirements because of additional routes of exposure or significantly greater exposures than those assumed in developing the final cleanup standards of this policy.

There may also be exceptional spill situations that require less stringent cleanup, or a different approach to cleanup, due to factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable.

A. Excluded Spills

Although the following six spill situations are excluded from the automatic application of final numerical decontamination standards of Units IV.B and C, the general requirements under Unit IV.A do apply to these spills. In addition, all of these excluded situations require practicable, immediate actions to contain the area of contamination. While these situations may not always require more stringent cleanup measures, the Agency is excluding these situations because they will always involve significant factors that may not be adequately addressed by cleanup standards based upon typical spill characteristics.

For the following six spill situations, the responsible party shall decontaminate the spill in accordance with site-specific requirements established by the EPA regional offices:

1. Spills that result in the direct contamination of surface waters (surface waters include, but are not limited to, "waters of the United States" as defined in 40 CFR Part 122, ponds, lagoons, wetlands, and storage reservoirs).
2. Spills that result in the direct contamination of sewers or sewage treatment systems.
3. Spills that result in the direct contamination of any private or public drinking water sources or distribution systems.
4. Spills which migrate to and contaminate surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with this policy.
5. Spills that contaminate animal grazing lands.
6. Spills that contaminate vegetable gardens.

B. Spill Situations Within the Scope of the Policy That May Warrant More Stringent Cleanup Levels

For spills within the scope of this policy, EPA generally retains the authority to require additional cleanup upon finding that, despite good faith efforts by the responsible party, the numerical decontamination levels in the policy have not been met (see discussion in Unit VI). In addition, EPA foresees the possibility of exceptional spill situations in which site-specific risk factors may warrant additional cleanup to more stringent numerical decontamination levels than are required by the policy. In these situations, the Regional Administrator has the authority to require additional cleanup upon finding, based upon the specific facts of the spill, that further cleanup must occur to prevent unreasonable risk. Before making a final decision on additional cleanup, the Regional Administrator will notify the Director of the Office of Toxic Substances of his finding and the basis for the finding.

For example, site-specific characteristics such as short depth to ground water, type of soil, or the presence of a shallow well may pose exceptionally high potential for ground water contamination by PCBs remaining after cleanup to the standards specified in this policy. Spills that pose such a high degree of potential for ground water contamination have not been excluded from the policy under Unit II.A.1 because the presence of such potential may not be readily apparent. EPA feels that automatically excluding such spills from the scope of the policy could result in the delay of cleanup—a particularly undesirable outcome if potential ground water contamination is in fact a significant concern.

C. EPA Flexibility To Allow Less Stringent or Alternative Requirements

EPA retains the flexibility to allow less stringent or alternative decontamination measures based upon site-specific considerations. EPA will exercise this flexibility if the responsible party demonstrates that cleanup to the numerical decontamination levels is clearly unwarranted because of risk-mitigating factors, that compliance with the procedural requirements or numerical standards in the policy is impracticable at a particular site, or that site-specific characteristics make the costs of cleanup prohibitive.

The Regional Administrator will notify the Director of OTS of any decision (and the basis for that decision) to all less stringent cleanup. The purpose of this notification is to enable the Director of OTS to ensure consistency in standards for spill cleanup under special circumstances across the regions.

D. The Relationship of This Policy to Other Statutes

This policy does not affect cleanup standards or requirements for the reporting of spills imposed, or to be imposed, under other Federal Statutory authorities, including but not limited to, the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). Where more than one requirement applies, the stricter standard must be met.

The Agency recognizes that the existence of this policy will inevitably result in attempts to apply the standards to situations within the scope of other statutory authorities. However, other statutes require the Agency to consider different or alternative factors in determining appropriate corrective actions. In addition, the types and magnitudes or exposures associated with sites requiring corrective action under other statutes often involve important differences from those expected of the typical, electrical equipment-type spills considered in developing this policy. Thus, cleanups under other statutes, such as RCRA corrective actions or remedial and emergency response actions under SARA, may result in different outcomes.

III. Definitions

For purposes of this policy, certain words and phrases are used to denote specific materials, procedures, or circumstances. The following definitions are provided for purposes of clarity and are not to be taken as exhaustive lists of situations and materials covered by the policy.

1. *PCBs.* The term means polychlorinated biphenyls as defined in 40 CFR 761.3. As specified in 40 CFR 761.1(b), no requirements may be avoided through dilution of the PCB concentration.

2. *Low-concentration PCBs.* The term means PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials which EPA requires to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid).

3. *High-concentration PCBs.* The term means PCBs that contain 500 ppm or greater PCBs, or those materials which EPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing.

4. *Spill.* The term as used in this policy means both intentional and

unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. This policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration of PCBs in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm, but less than 500 ppm PCBs, and is subject to the relevant requirements of this policy.

5. *Residential/commercial areas.* Residential/commercial areas are those areas where people live or reside, or where people work in other than manufacturing or farming industries. Residential areas include housing and the property on which housing is located, as well as playgrounds, roadways, sidewalks, parks and other similar areas within a residential community. Commercial areas are typically accessible to both members of the general public and employees and include public assembly properties, institutional properties, stores, office buildings, and transportation centers.

6. *Outdoor electrical substations.* Outdoor electrical substations are outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power. Outdoor electrical substations restrict public access by being fenced or walled off as defined at 40 CFR 761.30(1)(1)(ii). For purposes of this TSCA Policy, outdoor electrical substations are defined as being located at least 0.1 kilometer (km) from a residential/commercial area. Outdoor fenced-off and restricted access areas used in the transmission and/or distribution of electrical power which are located less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.

7. *Other restricted access (nonsubstation) locations.* Other restricted access (nonsubstation) locations are areas other than electrical substations that are at least 0.1 km from a residential/commercial area and limited by man-made barriers (e.g., fences and walls) or substantially limited by naturally occurring barriers such as mountains, cliffs, or rough terrain. These areas generally include industrial facilities and extremely remote rural locations. (Areas where access is restricted but are less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.)

8. *Nonrestricted access areas.* A nonrestricted access area is any area other than restricted access, outdoor electrical substations, and other restricted access locations, as defined in paragraphs 5 and 6 of this unit. In addition to residential/commercial areas, these areas include unrestricted access rural areas (areas of low-density development and population where access is uncontrolled by either man-made barriers or naturally occurring barriers, such as rough terrain, mountains, or cliffs).

9. *High-contact residential/commercial surface.* A high-contact residential/commercial surface is a surface in a residential/commercial area which is repeatedly touched, often for relatively long periods of time. Doors, wall areas below 6 feet in height, uncovered flooring, windowsills, fencing, banisters, stairs, automobiles, and children's play areas, such as outdoor patios and sidewalks, are examples of high-contact residential/commercial surfaces. Examples of low-contact residential/commercial surfaces include interior ceilings, interior wall areas above 6 feet in height, roofs, asphalt roadways, concrete roadways, wooden utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components (e.g., aluminum/vinyl siding, cinder block, asphalt tiles), and pipes.

10. *High-contact industrial surface.* A high-contact industrial surface is a surface in an industrial setting which is repeatedly touched, often for relatively long periods of time. Manned machinery and control panels are examples of high-contact industrial surfaces. High-contact industrial surfaces are generally of impervious solid material. Examples of low-contact industrial surfaces include ceilings, walls, floors, roofs, roadways and sidewalks in the industrial area, utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components, indoor vaults, and pipes.

11. *Soil.* The term means all vegetation, soils and other ground media, including but not limited to sand, grass, gravel, and oyster shells. It does not include concrete and asphalt.

12. *Impervious solid surfaces.* The term means solid surfaces which are nonporous and thus unlikely to absorb spilled PCBs within the short period of time required for cleanup of spills under this policy. Impervious solid surfaces include, but are not limited to, metals, glass, aluminum siding, and enameled or laminated surfaces.

13. *Nonimpervious solid surfaces.* The term means solid surfaces which are porous and are more likely to absorb spilled PCBs prior to completion of the cleanup requirements prescribed in this policy. Nonimpervious solid surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard.

14. *Double wash/rinse.* The double wash/rinse procedural performance standard applied in this policy means a minimum requirement to cleanse solid surfaces (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight). A volume of PCB-free fluid sufficient to cover the contaminated surface completely must be used in each wash/rinse. The wash/rinse requirement does not mean the mere spreading of solvent or other fluid over the surface, nor does the requirement mean a once-over wipe with a soaked cloth. Precautions must be taken to contain any runoff resulting from the cleansing and to dispose properly of wastes generated during the cleansing.

15. *Standard wipe test.* For spills of high concentration PCBs on solid surfaces, this policy requires cleanup to numerical surface standards and sampling by a standard wipe test to verify that the numerical standards have been met. This definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard-size template (10 centimeters (cm) X 10 cm) will be used to delineate the area of cleanup; the wiping medium will be a gauze pad or glass wool of known size which has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air. EPA strongly recommends that the gauze (or glass wool) be prepared with hexane in the laboratory and that the wiping medium be stored in sealed glass vials until it is used for the wipe test. Further, EPA requires the collection and testing of field blanks and replicates.

16. *Requirements and standards.* The term "requirements," as used in this policy means both the procedural responses and numerical decontamination levels set forth in this policy as constituting adequate cleanup of PCBs. The term "standards" means the numerical decontamination levels set forth in this policy.

17. *Spill area.* The term means the area of soil on which visible traces of the spill can be observed plus a buffer

zone of 1 foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area, or on which visible traces of the spilled material are observed, is included in the spill area. This area represents the minimum area assumed to be contaminated by PCBs in the absence of precleanup sampling data and is thus the minimum area which must be cleaned.

18. *Spill boundaries.* The term means the actual area of contamination as determined by postcleanup verification sampling, or by precleanup sampling to determine actual spill boundaries. EPA can require additional cleanup when necessary to decontaminate all areas within the spill boundaries to the levels required in this policy (e.g., additional cleanup will be required if postcleanup sampling indicates that the area decontaminated by the responsible party, such as the spill area as defined in paragraph 13 of this unit, did not encompass the actual boundaries of PCB contamination).

IV Requirements for PCB Spill Cleanup

A. General Requirements

Unless expressly limited, the reporting, disposal, and precleanup sampling requirements in this unit apply to all spills of PCBs at concentrations of 50 ppm or greater which are subject to decontamination requirements under TSCA, including those spills listed in Unit II.A.1 through 6 which are excluded from the final cleanup standards in Units IV. B and C.

1. *Reporting requirements.* The following reporting is required in addition to applicable reporting requirements under the CWA or CERCLA. For example, under the National Contingency Plan all spills involving 10 lbs or more of PCB material must currently be reported to the National Response Center (1–800–424–8802). The requirements below are designed to be consistent with existing reporting requirements to the extent possible so as to minimize reporting burdens on the governments as well as the regulated community.

a. Where a spill directly contaminates surface water, sewers, or drinking water supplies (see discussion under Unit II.A), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and obtain guidance for appropriate cleanup measures in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

b. Where a spill directly contaminates grazing lands or vegetable gardens (see discussion under Unit II.A), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and proceed with the immediate requirements specified in Unit IV.B or C, depending of the source of the spill, in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

c. Where a spill exceeds 10 pounds of PCB material (generally 1 gallon of PCB dielectric fluid) and is not addressed in paragraph 1.a. or b. of this unit, the responsible party will notify the appropriate EPA regional office and proceed to decontaminate the spill area in accordance with this TSCA policy in the shortest possible time after discovery, but in no case later than 24 hours after discovery. For purposes of the notification requirement, the 10 pounds are measured by the weight of the PCB-containing material spilled rather than by the weight of only the PCBs spilled.

d. Spills of 10 pounds of less which are not addressed in paragraphs 1. a. or b. of this unit must cleaned up in accordance with this policy (in order to avoid EPA enforcement liability), but notification of EPA is not required.

2. *Disposal of cleanup debris and materials.* All contaminated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under this policy shall be properly stored, labeled, and disposed of in accordance with the provisions of 40 CFR 761.60.

3. *Determination of spill boundaries in the absence of visible traces.* For spills where there are insufficient visible traces yet there is evidence of a leak or spill, the boundaries of the spill are to be determined by using a statistically based sampling scheme.

B. Requirements for Cleanup of Low-Concentration Spills Which Involve Less Than 1 LB PCBs By Weight (Less Than 270 Gallons of Untested Mineral Oil)

1. *Decontamination requirements.* Spills of low-concentrations PCBs (as defined in Unit III) which involve less than 1 pound of PCBs by weight (i.e., less than 270 gallons of untested mineral oil containing less than 500 ppm PCBs) shall be cleaned in the following manner:

a. Solid surfaces must be double washed/rinsed (as defined in Unit III) except that all indoor, residential surfaces other than vault areas must be cleaned to 10 micrograms per 100 square centimeters (100 $\mu g/cm^2$) by standard commercial wipe tests.

b. All soil within the spill area (i.e., visible traces of soil and a buffer of 1 lateral foot around the visible traces) must be excavated and the ground be restored to its original configuration by back-filling with clean soil (i.e., containing less than 1 ppm PCBs).

c. Requirements in paragraphs 1. a. and b. of this unit must be completed within 48 hours after the owner of the equipment, facility, or other source of PCBs (the responsible party) was notified or became aware of the spill.

2. *Effect of emergency or adverse weather.* Completion of cleanup may be delayed beyond 48 hours in case of circumstances including but not limited to, civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergency, have left insufficient visible traces, the responsible party must use a statistically based sampling scheme to determine the spill boundaries as required in Unit IV.A.3.

3. *Records and certification.* At the completion of cleanup, the responsible party or appropriate agent shall document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years. The records and certifiction shall consist of the following:

a. Indentification of the source of the spill, e.g., type of equipment.

b. Estimated or actual date and time of the spill occurrence.

c. The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

d. A brief description of the spill location.

e. Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.

f. A brief description of the solid surfaces cleaned and of the double wash/rinse method used.

g. Approximate depth of soil excavation and the amount of soil removed.

h. A certification statement signed by the responsible party or his/her designated agent (e.g., a facility manager or foreman) stating that the cleanup

requirements have been met and that the information contained in the record is true to the best of his/her knowledge.

While not required for compliance with this policy, the following information would be useful if maintained in the records: (1) Additional pre- or postcleanup sampling: and (2) the estimated cost of the cleanup by man-hours, dollars, or both.

C. Requirements for Cleanup of High-Concentration Spills and Low-Concentration Spills Involving 1 LB or More PCBs By Weight (270 Gallons or More of Untested Mineral Oil)

Cleanup of low-concentration spills involving 1 lb or more PCBs by weight, and of all other spills of regulated materials shall be considered complete if all of the immediate requirements, cleanup standards, sampling, and recordkeeping requirements below are met.

1. *Immediate requirements.* The following four actions must be taken as quickly as possible and within no more than 24 hours (or within 48 hours for PCB Transformers) after the owner of the equipment or container from which the spill occurred, or other responsible representative of the owner such as a facility manager, was notified or became aware of the spill, except that actions described in paragraphs 1. b., c., and d. of this unit may be delayed beyond 24 hours if circumstances (e.g., civil emergency, hurricane, tornado, or other similar adverse weather conditions, lack of access due to physical impossibility, or emergency operating conditions) so require for the duration of the adverse conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Owners of spilled PCBs who have delayed cleanup because of these types of circumstances must keep records documenting the fact that circumstances precluded rapid response. The responsible party shall:

a. Notify the EPA regional office and the NRC as required by Unit IV.A.1 or by other applicable statutes.

b. Effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces plus a 3-foot buffer, and place clearly visible signs advising persons to avoid the area, to minimize the spread of contamination as well as the potential for human exposure.

c. Record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area. If there are no visible traces, the responsible party shall record this fact and contact the regional office of the EPA for guidance in completing statistical sampling of the spill area to establish spill boundaries.

d. Initiate cleanup of all visible traces of the fluid on hard surfaces and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc.

If there has been a delay in reaching the site and there are insufficient visible traces of PCBs remaining at the spill site, the owner of the PCBs must estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspect contamination. The owner must then utilize a statistically based sampling scheme to identify the boundaries of spill area as soon as practicable.

Although this policy requires certain immediate actions, as described above, EPA is not placing a time limit on completion of the cleanup effort since the time required for completion will vary from case to case. However, the Agency expects that decontamination will be achieved promptly in all cases and will consider the promptness of completion in determining whether a responsible party made good faith efforts to clean up in accordance with this policy.

2. *Requirements for decontaminating spills in outdoor electrical substations.* Spills which occur in outdoor electrical substations (as defined in Unit III) shall be decontaminated in accordance with paragraphs a. and b. of this unit. Conformance to the cleanup standards in paragraphs a. and b. of this unit shall be verified by postcleanup sampling as specified in Unit V. At such times as outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the non-restricted access requirements in Unit IV.C.4.

a. Contaminated solid surfaces (both impervious and non-impervious) shall be cleaned to a PCB concentration of 100 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

b. At the option of the responsible party, soil contaminated by the spill will be cleaned: (1) To 25 ppm PCBs by weight, or (2) to 50 ppm PCBs by weight provided that a label or notice is visibly placed in the area. Upon demonstration by the responsible party that cleanup to 25 ppm or 50 ppm will jeopardize the integrity of the electrical equipment at the substation, the EPA regional office may establish an alternative cleanup method or level and place the responsible party on a reasonably timely schedule for completion of cleanup.

3. *Requirements for decontaminating spills in other restricted access areas.* Spills which occur in restricted access locations other than outdoor electrical substations (as defined in Unit III) shall be decontaminated in accordance with paragraphs 3.a through e. of this unit. Conformance to the cleanup standards in paragraphs a. through e. of this unit shall be verified by postcleanup sampling as specified in Unit V. At such times as restricted access areas other than outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the nonrestricted access area requirements under Unit IV.C.4.

a. High-contact solid surfaces (see definition of high-contact industrial surfaces in Unit III) shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

b. Low-contact, indoor, impervious solid surfaces will be decontaminated to 10 $\mu g/100\ cm^2$.

c. At the option of the responsible party, low-contact, indoor, nonimpervious surfaces will be cleaned either: (1) To 10 $\mu g/100\ cm^2$; or (2) to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if encapsulation failed at a particular site this failure would create an imminent hazard.

d. Low-contact, outdoor surfaces (both impervious and non-impervious) shall be cleaned to 100 $\mu g/100\ cm^2$.

e. Soil contaminated by the spill will be cleaned to 25 ppm PCBs by weight.

4. *Requirements for decontaminating spills in non-restricted access areas.* Spills which occur in nonrestricted access locations (as defined in Unit III) shall be decontaminated in accordance with paragraphs 4.a. through e. of this unit. Conformance to the cleanup standards in paragraphs 4.a. through e. of this unit shall be verified by postcleanup sampling as specified in Unit V. At such times as outdoor electrical substations and other restricted access areas are converted to another use, the spill site shall be cleaned up to the non-restricted access area requirements.

a. Furnishings, toys, and other easily replaceable household items shall be disposed of in accordance with the provisions of 40 CFR 761.60 and replaced by the responsible party.

b. Indoor solid surfaces and high-contact outdoor solid surfaces (see definition of high contact residential/

commercial surfaces in Unit III) shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

c. Indoor vault areas, and low-contact, outdoor, impervious solid surfaces shall be decontaminated to 10 $\mu g/100\ cm^2$.

d. At the option of the responsible party, low-contact, outdoor, nonimpervious solid surfaces shall be either: (1) cleaned to 10 $\mu g/100\ cm^2$; or (2) cleaned to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

e. Soil contaminated by the spill will be decontaminated to 10 ppm PCBs by weight, provided that soil is excavated to a minimum depth of 10 inches. The excavated soil will be replaced with clean soil (i.e., containing less than 1 ppm PCBs), and the spill site will be restored (e.g., replacement of turf).

5. *Records.* The responsible party or appropriate agent shall document the cleanup with records of decontamination. The records must be maintained for a period of 5 years. The records and certification shall consist of the following:

a. Identification of the source of the spill (e.g., type of equipment.)

b. Estimated or actual date and time of the spill occurrence.

c. The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

d. A brief description of the spill location and the nature of the materials contaminated (this information should include whether the spill occurred in an outdoor electrical substation, other restricted access location, or in a nonrestricted access area).

e. Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of sampling methodology used to establish the spill boundaries.

f. A brief description of the solid surfaces cleaned.

g. Approximate depth of soil excavation and the amount of soil removed.

h. Postcleanup verification sampling data and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical technique used.

While not required for compliance with this policy, information on the estimated cost of cleanup (by man-hours, dollars, or both) would be useful if maintained in the records.

EPA will soon issue for publication in the **Federal Register** a proposed rule to require these recordkeeping measures to facilitate EPA's monitoring of PCB spill cleanups.

V. Sampling Requirements

Postcleanup sampling is required to verify the level of cleanup under Unit IV.C. 2 through 4. The responsible party, or designated agent, may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples), provided that the requirements of paragraphs 1. and 2. of this unit are satisfied.

1. The sampling area is the greater of (1) an area equal to the area cleaned plus an additional 1-foot boundary, or (2) an area 20 percent larger than the original area of contamination.

2. The sampling scheme must ensure 95 percent confidence against false positives.

3. The number of samples must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.

4. The sampling scheme must include calculation for expected variability due to analytical error.

EPA recommends the use of the sampling scheme developed by the Midwest Research Institute (MRI) for use in EPA enforcement inspections: "Verification of PCB Spill Cleanup by Sampling and Analysis." Guidance for the use of this sampling scheme is available in the MRI report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup." Both the MRI sampling scheme and the guidance document are available from the TSCA Assistance Office at the address and telephone number given under "FOR FURTHER INFORMATION CONTACT." The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence while using fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.

At its discretion, EPA may take samples from any spill site. If EPA's sampling indicates that the remaining concentration level exceeds the required level, EPA will require further cleanup. For this purpose, the numerical level of cleanup required for spills cleaned in accordance with Unit IV.B are deemed to be the equivalent of numerical cleanup requirements required for cleanups under Unit IV.C. 2 through 4. EPA may sample using its best engineering judgment, a statistically valid random or grid sampling technique, or both. When using engineering judgment or random "grab" samples, EPA will take into account that there are limits on the power of a grab sample to dispute statistically based sampling of the type required of the responsible party. EPA headquarters will provide guidance to the EPA regions on the degree of certainty associated with various grab sample results.

VI. EPA Enforcement and the Effect of Compliance With This Policy

Although a spill of material containing 50 ppm or greater PCBs is considered improper PCB disposal, this policy establishes requirements that EPA considers to be adequate cleanup of the spilled PCBs. Cleanup in accordance with this policy means compliance with the procedural as well as the numerical requirements of this policy. Compliance with this policy creates a presumption against both enforcement action for penalties and the need for further cleanup under TSCA. The Agency reserves the right, however, to initiate appropriate action to compel cleanup where, upon review of the records of cleanup, EPA finds that the decontamination levels in the policy have not been achieved. The Agency also reserves the right to seek penalties where the Agency believes that the responsible party has not made a good faith effort to comply with all provisions of this policy, such as prompt notification of EPA of a spill, recordkeeping, etc.

EPA's exercise of enforcement discretion does not preclude enforcement action under other provisions of TSCA or any other Federal statute. This includes, even in cases where the numerical decontamination levels set forth in this policy have been met, civil or criminal action for penalties where EPA believes the spill to have been the result of gross negligence or knowing violation.

The TSCA policy has been reviewed by the Office of Management and Budget.

This concludes EPA's TSCA policy. Unit VII, which follows, contains the rationale for the policy, the data on which the policy was based, and the

areas in which EPA lacks data. EPA solicits information to fill those gaps.

VII. Development of the TSCA Spill Cleanup Policy

As will become apparent in the discussion below, there are gaps in the information which was available to the Agency in developing the TSCA policy. The EPA designed the TSCA policy to enable the Agency and the regulated industry to gather data for filling the gaps. In all cases, through the cleanup levels established in the TSCA policy and by retaining authority to require additional cleanup where warranted, EPA has placed sufficient controls on the party responsible for cleanup to ensure that future PCB spills will be cleaned to levels that do not pose an unreasonable risk of injury to human health or the environment. The TSCA policy reflects the Agency's best judgment in light of available information. However, the Agency welcomes comment on, and additional relevant information about, the TSCA policy.

A. Risks Posed by Leaks and Spills of PCBs

1. *Frequency, amount, and nature of leaks and spills.* The TSCA policy establishes the measures which EPA considers to constitute adequate cleanup of PCB contamination resulting from activities regulated under TSCA. EPA expects that the TSCA policy will be most frequently applied to leaks and spills of PCBs which occur during the use of authorized equipment such as electrical transformers and capacitors. Thus, EPA's evaluation of the risks posed by spills of PCBs and the costs associated with cleanup following these spills focuses primarily on leaks and spills of PCBs from electrical transformers and capacitors.

EPA estimates that there are 121,000 (askarel) PCB Transformers currently in use, over 20 million mineral oil transformers contaminated with PCBs currently in use, and over 2.8 million large PCB Capacitors currently in use. Available data indicate that on an annual basis, about 3.3 percent of (askarel) PCB Transformers in use will leak or spill PCBs. The average PCB leak or spill from a PCB Transformer is 5.3 gallons, or about 66 pounds of PCBs. On an annual basis, EPA expects that about 264,000 pounds of PCBs are leaked or spilled into the environment from PCB Transformers.

EPA expects that about 17,000 of these PCB Transformers are located in electrical substations, where 37,000 pounds of spilled PCBs would be expected to be released each year. EPA expects that about 27,000 PCB Transformers are located in industrial facilities, where an estimated 59,000 pounds of PCBs are spilled each year. Finally, 77,000 PCB Transformers are located in other areas (most likely, in or near commercial buildings), where an estimated 168,000 pounds of PCBs are released each year.

EPA expects that of the over 20 million PCB-containing mineral oil transformers in use, 76 percent are located in residential neighborhoods and public areas (i.e., schools, shopping centers, etc.). The majority of these transformers contain less than 500 parts per million PCBs. Available data indicate that the average leak or spill of PCBs from mineral oil transformers contains less than one-tenth of a tablespoon of PCBs, or 0.08 ounce of PCBs. On an annual basis, EPA expects that 627 pounds of PCBs are spilled from mineral oil transformers in residential and public areas. The remaining mineral oil transformers are located in outdoor electrical substations, industrial facilities, and rural areas. EPA estimates that less than 200 pounds of PCBs are leaked from these transformers each year.

Based on available data, EPA estimates that there are over 2.8 million PCB Capacitors in use. Of these 2.8 million capacitors, EPA estimates that 1.6 million are in use in substations or generating facilities and 1.2 million are inside buildings and on utility poles throughout the distribution system. Of the 1.6 million PCB Capacitors in use in electrical substations, EPA expects that over 12,000 leak each year, releasing about 200,000 pounds of PCBs. Of the 1.2 million PCB Capacitors in use inside buildings and on utility poles, EPA expects that over 9,000 leak each year, releasing about 154,000 pounds of PCBs.

Electrical transformers generally contain 100 times the amount of PCBs contained within PCB Capacitors. PCB Transformers typically contain between 300 and 500 gallons of PCB dielectric fluid, while PCB Capacitors generally contain about 3 gallons of PCB dielectric fluid. Unlike PCB Transformer spills, the majority of PCB Capacitor spills involve the violent rupture of the capacitor and the spraying of PCBs. Thus, PCBs spilled from energized capacitors are generally more widely distributed in the spill area than PCBs spilled from transformers. Available data indicate that for over 80 percent of capacitor spills, PCBs are distributed as far as 11 feet from the center of the spill.

PCBs spilled from transformers are more likely to leak from gaskets and valves, and the area contaminated from these types of spills is more directly related to the amount of spilled material than is the case for explosive ruptures, such as occur from energized capacitors. EPA conducted a crude experiment in order to predict the maximum lateral spread of PCBs from other than explosive ruptures of electrical transformers; the maximum spread of water on low-porosity surfaces was tested and assumed to be equivalent to the maximum lateral spread of PCBs and PCB-contaminated oils on soil. EPA found that for every gallon of material spilled, one could expect a maximum area of contamination of about 3 square meters (m^2). Although with time one would see a slight increase in lateral spread (assuming no runoff), for the most part, a 1 gallon spill of PCB material from a transformer cleaned up within 2 weeks of the spill would not be expected to contaminate greater than a $3m^2$ area. This assumes of course that the material has not been tracked into other areas in the interim and that weather conditions have not caused further lateral spread. Spills of PCBs from deenergized capacitors, other authorized equipment, and containers of PCBs would be expected to behave in a similar manner to leaks and spills of PCBs from non-explosive transformer spills.

To summarize, the total amount of PCBs released from electrical transformers and capacitors each year from leaks and spills of PCBs is estimated at about 620,000 pounds (out of an estimated 163 million pounds of PCBs in use in this equipment). Of these PCBs, 38 percent are spilled in electrical substations and 62 percent of these PCBs are spilled in residential/commercial areas, rural areas, and industrial facilities. The majority of spilled PCBs are spilled from capacitors, and capacitor spills typically result from violent ruptures and lead to the distribution of PCBs at distances as far away as 11 feet from the center of the spill (total average spill area is about 380 square feet).

PCBs spilled from deenergized capacitors, transformers (excluding transformers involved in fires), other authorized equipment, and PCB Containers generally involve nonviolent ruptures and the maximum spread of the spilled material can be estimated by assuming $3m^2$ of contamination per gallon of spilled material.

2. *Toxicity and environmental persistence.* EPA has concluded that PCBs are both toxic and persistent. In earlier rulemakings and Agency PCB health effects review documents, EPA has determined that persons exposed to PCBs can develop chloracne (a

disfiguring skin illness), and that based on laboratory animal data, there is a potential for reproductive effects and developmental toxicity as well as oncogenicity in humans exposed to PCBs. EPA has also concluded that PCBs are resistant to degradation and that they bioaccumulate and bioconcentrate in the fatty tissue of organisms. PCBs are very stable compounds which can persist for years when released into the environment. A more detailed discussion of EPA's findings on the health effects of PCBs can be found in the July 10, 1986 **Federal Register** (51 FR 28172).

Recently, the Office of Health and Environmental Assessment (OHEA) at EPA developed draft health advisories for PCBs in soil for use by EPA's Office of Emergency and Remedial Response (OERR). These health advisory levels are to be used as guidelines for initiating removal action for sites contaminated with PCBs. The draft health advisories developed by OHEA address both the oncogenic risks and other than oncogenic risks posed to humans by exposures to PCBs in soils at various levels.

The cancer potency slope factor for PCBs has been estimated by EPA's Cancer Assessment Group (CAG) and the Office of Toxic Substances (OTS) to be 4.34 $(mg/kg/day)^{-1}$ and 3.57 $(mg/kg/day)^{-1}$, respectively. An average of these values (4.0 $(mg/kg/day)^{-1}$) was used in the OHEA draft health advisories as the PCB cancer potency factor. The OHEA calculation of the human dose associated with a 1×10^{-6} level of oncogenic risk is 0.0175 microgram/day. The Agency's assessment of risks associated with dermal and inhalation exposure to PCBs on solid surfaces was also based upon a cancer potency slope factor of 4.0 $(mg/kg/day)^{-1}$ for PCBs.

3. *Potential for exposure to spilled PCBs.* In evaluating potential routes of exposure to PCBs which are leaked and spilled, EPA looked at the potentional for exposure in nonrestricted access areas, restricted access areas, and restricted access, outdoor electrical substations. Further, since the TSCA policy is designed to apply to the large majority of spill situations, EPA focused on the routes of potential exposure associated with typical spill situations. Unique spill scenarios which present greater potential exposures or additional routes of exposure are excluded from application of the cleanup levels in the TSCA policy.

In developing the cleanup standards for PCB spills into soil and other ground media, EPA relied primarily on the exposure and risk analysis in the OHEA health advisories for PCBs in soil. Exposure estimates used to evaluate the risk associated with various cleanup standards for solid surfaces such as metals, wood, asphalt, and concrete were developed by the EPA's Office of Toxic Substances. Neither the OHEA assessment for PCBs in soil nor the OTS estimates of exposure to PCBs in soil assume PCB contamination of other potential exposure pathways such as surface water, drinking water supplies, sewer systems, vegetable gardens, or grazing lands.

EPA believes that the large majority of spills which occur after the effective date of the TSCA policy will not involve these additional routes of exposure. Those exceptional spill situations which would result in these additional routes of exposure are excluded from the TSCA policy and must be cleaned up to levels determined by the appropriate EPA regional office. EPA excluded these spill situations from the scope of the policy because such spills may have to be cleaned up to lower levels in recognition of the potential for additional human exposures. Whether or not more stringent cleanup standards are necessary for these exceptional spill situations, the additional routes of potential exposure require some degree of evaluation on a case-by-case basis before making a final decision on appropriate cleanup levels in such circumstances.

Further, spills of PCBs into sand, soil, gravel, and other similar materials in special areas within the residential/commercial setting (i.e., areas where people may come into repeated daily contact, such as children's sandboxes, spills which pose particular concerns about future ground water contamination, spills which involve the combustion of PCBs (and the possible formation of toxic combustion byproducts such as polychlorinated dibenzofurans (PCDFs) and polychlorinated dibenzodioxins (PCDDs)), and spills onto farmland may be required to be cleaned up to lower levels, in recognition of the increased potential for exposure. The EPA regional offices should be contacted for guidance on appropriate cleanup for these types of spills.

The OTS dermal exposure assessments for PCBs on solid surfaces such as metal, concrete, and asphalt assume that PCBs are transferred to the skin at a relatively high rate (50 percent or more). This assumption is based on the results of an EPA-sponsored study on the transfer of PCBs from glass and unpainted metal to skin (human skin and pig skin) upon contact. EPA currently lacks data on the rate of transfer of PCBs from rougher, porous surfaces such as concrete, asphalt or wood to human skin. Although EPA expects that the transfer rate may be significantly lower for rough, porous surfaces, in the absence of more extensive data, EPA has assumed that the transfer rate would be the same as for glass and unpainted steel.

a. *Exposures in nonrestricted access areas.* Areas which do not limit public access by man-made or naturally occurring barriers (i.e., residential, commercial, and unrestricted access rural areas) generally present the greatest potential for a high degree of human exposure to spilled PCBs. Spills of PCBs in residential/commercial areas may involve: (1) The contamination of soil, grass, sand, gravel, and other ground materials; (2) the contamination of outdoor solid surfaces such as metal, concrete, asphalt, and wood; (3) the contamination of indoor solid surfaces such as ceilings, walls, and floors; (4) the contamination of indoor vault areas; and (5) the contamination of household items such as clothing, toys, and patio furniture.

Spills of PCBs in unrestricted access rural areas may involve the contamination of materials like those listed under paragraphs (1) and (2) of this unit. Since human exposures to PCBs spilled in unrestricted access rural areas may at times approach levels of exposure in residential/commercial areas, EPA has included unrestricted access rural areas under the standards for residential/commercial spills. Typical exposures would, however, be expected to be lower in rural areas compared to typical exposures in the residential/commercial setting.

i. *Exposures from outdoor spills into soil, sand, gravel, and other similar materials.* The principal routes of exposure to PCBs spilled into soil in residential areas would be through inhalation and ingestion. Dermal exposures may also occur, although EPA expects that the PCBs will adsorb to the soil particles, reducing the rate of dermal absorption. OHEA has calculated the expected levels of human exposure to PCBs through inhalation and ingestion when PCBs are present at different levels in soil.

The OHEA assessment concludes that a PCB level of 1 to 6 ppm PCBs in soil in a residential/commercial area would be associated with a 1×10^{-5} level of oncogenic risk. OHEA assumed that the contaminated area is 0.5 acre (18,225 square feet), that 0.6 gram of soil is ingested per day at ages 0 to 6, and that the population is exposed for 50 percent of their lifetime. The placement of a 10-

inch cap of clean soil on top of soil containing 1 to 6 ppm PCBs reduces the expected level of oncogenic risk by an order of magnitude (to 1×10^{-6}).

ii. *Exposures to spills onto solid surfaces*—a. *Outdoor surfaces.* PCBs spilled onto outdoor solid surfaces such as metal, concrete, asphalt, or utility poles in residential areas would result in some inhalation exposures and infrequent dermal exposure. For solid surfaces to which people would be expected to have frequent contact, higher levels of dermal exposure would be expected.

Examples of low-contact outdoor solid surfaces include asphalt and concrete roadways, roof areas, unmanned machinery, concrete pads beneath electrical equipment, curbing, and external structural building components. The estimated level of oncogenic risk associated with exposures to low-contact outdoor surfaces in residential/commercial settings (using reasonable worst-case assumptions about exposures to surface levels of 10 $\mu g/100$ cm^2) is between 1×10^{-5} and 1×10^{-6}.

Sidewalks and patios where children play, fences, and automobiles are examples of residential/commercial surfaces to which people may come into frequent daily contact. The estimated level of oncogenic risk associated with exposures to such higher contact outdoor surfaces in residential/commercial settings (using reasonable worst-case assumptions about exposures to surfaces levels of 0.5 to 1.0 $\mu g/100$ cm^2) is between 1×10^{-5} and 1×10^{-6}.

b. *Indoor surfaces.* Spill onto indoor hard surfaces may occur when outdoor electrical equipment ruptures catastrophically and sprays PCBs into a room through an open window or door. Spills onto indoor hard surfaces may also occur when electrical equipment inside a building leaks or spills PCBs and the leaked or spilled PCBs are distributed outside the electrical equipment room into other areas of the building through ventilation equipment and ductwork or by tracking. Inhalation exposures and dermal exposures would be expected following a spill of PCBs onto an indoor hard surface. Based on EPA's assessment of the risks posed by spills of PCBs onto indoor hard surfaces, dermal exposures would be expected to be the exposure route of highest concern (inhalation exposures to residual indoor PCB levels of 10 $\mu g/100$ cm^2 are associated with a 1×10^{-6} level of oncogenic risk, while dermal exposures to this same level of PCBs on a low-contact indoor surface are associated with a 1×10^{-5} level of oncogenic risk).

From a perspective of dermal exposure, there are two types of potentially contaminated surfaces: low-contact surfaces and high-contact surfaces. Low-contact surfaces are those which are infrequently touched. In a residential/commercial setting, ceilings and wall areas above 6 feet in height would be considered low-contact surfaces. High-contact surfaces are those which are repeatedly contacted, often for relatively long periods of time. High-contact surfaces in a residential/commercial area include uncovered flooring, wall areas below 6 feet in height, stairways, bannisters, and railings. The estimated level of oncogenic risk associated with dermal exposures to 1 $\mu g/100$ cm^2 of PCBs on low-contact indoor hard surfaces is between 1×10^{-5} and 1×10^{-6}. The National Institute of Occupational Safety and Health (NIOSH) has reported that 0.5 $\mu g/100$ cm^2 is background level of PCBs on indoor hard surfaces, and this level of residual contamination on a high-contact indoor hard surface would be associated with a level of oncogenic risk between 1×10^{-5} and 1×10^{-6}.

c. *Easily replaceable/high-contact items.* PCBs released from electrical transformers or capacitors in indoor residential/commercial areas may result in the contamination of nonstructural, easily replaceable materials to which people have repeated daily contact (i.e., clothing, household furnishings, paper, notepads, office supplies, patio furniture, toys, swingsets, etc.). Since PCBs are expected to be readily absorbed through the skin, dermal contact with PCBs spilled onto these types of high-contact materials could result in significant exposures. Materials such as paper, clothing, and toys would themselves absorb the PCBs and be difficult, if not impossible, to clean completely. These materials would, however, be expected to release the PCBs slowly, resulting in continued dermal exposures to low levels of PCBs over a prolonged period of time. Depending upon the extent of contamination, inhalation exposures from these types of contaminated high-contact materials could also be significant.

iii. *Spills in indoor vault areas*—a. *Transformer vault areas and electrical equipment rooms.* One of the more common areas of PCB contamination from leaks and spills of PCBs from inuse electrical equipment are indoor transformer vault areas and electrical equipment rooms. Exposures to PCBs may occur through both inhalation and dermal routes, although since many transformer vaults and electrical equipment rooms are well ventilated (reducing airborne PCB concentrations in the vaults), the route of exposure of highest concern in an electrical equipment room would be the dermal route. From the perspective of inhalation exposures alone, residual PCB levels of 10 $\mu g/100$ cm^2 would be associated with oncogenic risks below 1×10^{-6}. Dermal exposures to PCBs on floors, ceilings, and walls in vault areas would be expected to be less than dermal exposures to PCBs on low-contact surfaces in residential/commercial areas because of less frequent contact with the contaminated surfaces. Residual PCB levels (on ceilings, floors, and walls) of 10 $\mu g/100$ cm^2 in vault areas would be associated with a 1×10^{-5} to 1×10^{-6} level of oncogenic risk.

b. *Exposures in industrial and other restricted access (nonsubstation) locations.* PCB spills in the industrial setting may result in: (1) Outdoor contamination of soil, sand, gravel, and other similar materials; (2) contamination of both indoor and outdoor hard surfaces; and (3) indoor contamination of vault areas and electrical equipment rooms.

i. *Outdoor contamination of soil, sand, etc.* The principal route of human exposure to PCBs from a spill in soil is through the inhalation route. Soil ingestion and dermal contact with soil would not be expected to be significant routes of exposure at a restricted access site. PCB levels in soil of 25 ppm would present less than a 1×10^{-7} level of oncogenic risk to people on-site who work more than 0.1 km from the actual spill area (assuming that the spill area is less than 0.5 acre).

ii. *Contamination of hard surfaces.* Hard surfaces which may become contaminated in an industrial area include items such as lathes and other types of industrial equipment and machinery, in addition to surfaces such as asphalt, concrete, and wood. In industrial areas, outdoor hard surfaces such as concrete, asphalt, and structural building components would not be expected to result in as frequent exposures as may occur for these surfaces in a residential/commercial area. Thus, residual PCB levels on these outdoor industrial surfaces of 100 $\mu g/100$ cm^2 (following cleanup of an "askarel" spill) would not be expected to result in significant exposures.

Indoor contamination of structural building components in industrial areas (e.g., ceilings, walls, and floors) and contamination of vaults or electrical equipment rooms would result in some inhalation exposures, but the principal route of exposure would be expected to be through dermal contact. Residual

PCB levels of 10 $\mu g/100\ cm^2$ on indoor low-contact surfaces in industrial areas would not be expected to result in significant exposures.

The highest exposure to surface contamination in an industrial setting would be to industrial workers using machinery contaminated with PCBs. Such workers may experience repeated dermal exposures to PCBs, and others may also experience such exposures if this equipment is sold, transported and/or reused. Dermal contact with PCBs may also lead to oral exposures during meals and while smoking. Depending upon the level of contamination, inhalation may also be significant, since workers using machinery are expected to be in close proximity to the equipment during its use. Higher levels of inhalation exposure can be anticipated if the contaminated equipment is operated under conditions of elevated temperature, since this would increase the volatility of any PCBs present on the equipment. Residual PCB levels of 0.5 $\mu g/100\ cm^2$ (reported by NIOSH as the background level for PCBs) on these types of high-contact surfaces would not result in significant exposures.

c. *Exposures in outdoor electrical substations.* PCBs released from transformers or capacitors in fenced-off electrical substations pose little risk of directly exposing members of the general population to PCBs. Electrical substations are typically located at distances greater than 0.1 kilometer from population areas and are generally fenced off to restrict access to authorized maintanance personnel only. Dermal and inhalation exposures by maintenance workers would, however, occur during servicing activities, an oral exposures may result from the transfer of PCBs from the hands to the mouth during meals or while smoking. Populations located at distances of greater than 0.1 kilometer from the site of the spill may incur inhalation exposures. However, the OHEA assessment document indicates that PCB levels in soil between 220 and 1,300 ppm present a 1×10^{-7} level of oncogenic risk to populations located at distances of 1 km or more from spill areas. Thus, PCB levels of 50 ppm in soil in an outdoor electrical substation would not be expected to result in significant exposures to the general population.

PCB spills onto hard surfaces in outdoor electrical substations may result in inhalation exposures and dermal exposures primarily to maintenance workers. The general population would not be expected to incur significant inhalation exposures, and dermal contact would be unlikely given the fact that these areas are fenced off and have restricted access. Residual PCB levels of 100 $\mu g/100\ cm^2$ would not be expected to result in significant exposures to either the occasional maintenance worker or the general population.

4. *Conclusions about PCB leaks and spills.* Leaks and spills of PCBs from PCB Equipment in residential/commercial areas present the greatest potential for human exposure, when compared to other types and locations of PCB spills. The potential for exposure is high. Oral, dermal, and inhalation exposures to PCBs from spills in residential areas are likely, expecially among children. Human exposures to PCBs spilled in unrestricted access rural areas also may at times be comparable to exposures in the residential setting. Available data on leaks and spills of PCBs indicate that the majority of PCBs spilled from PCB Equipment are spilled from PCB Capacitors and that there are many of these capacitors in use in residential areas.

Potential exposure to spilled PCBs or residual PCBs after cleanup of a spill in a restricted-access area is generally limited to industrial workers. Some types of contamination in restricted-access industrial facilities pose worker exposures as great as residential/commercial exposures. For example, contamination of control panels or manually operated machinery can result in frequent, if not continuous, dermal exposure to industrial workers. Other than any high-contact, manned equipment which may be located outdoors, spills outdoors in an industrial setting will result in a lesser degree of inhalation exposure to workers and the general population than similar spills in residential/commercial settings.

Spills in outdoor electrical substations pose the lowest potential exposures. Outdoor electrical substation are generally fenced off to restrict access to authorized personnel only. There is some possibility of dermal and inhalation exposures to maintenance workers. However, exposure to maintenance workers is less likely to be of a continuous or frequent nature than exposures to industrial workers.

B. Costs of Cleanup

1. *Factors influencing the cost of cleanup.* The cleanup of spilled PCBs from transformers and capacitors typically consists of a number of different measures: (1) Securing the spill site, (2) formulating a spill cleanup plan based on the nature of the spill, (3) removing or repairing the leaking equipment, (4) removing contaminated material (e.g., soil), (5) cleaning contaminated surfaces and decontaminating or removing equipment contaminated during cleanup, (6) properly disposing of contaminated materials, (7) ensuring proper cleanup by sampling and chemical analysis, and (8) restoring the site.

The costs associated with phases (1), (2), (3), and (8) above are fairly fixed and will not vary significantly with more, less stringent cleanup requirements. The costs associated with cleanup phases (4), (5), (6), and (7) above are the more variable elements influencing the total cost of cleanup and are affected by several factors, including the concentration of PCBs spilled, the amount of PCB material spilled, the size or boundary of the spill area (often influenced by the time lapse between spill occurrence and cleanup), and the nature and stringency of cleanup requirements.

According to information gathered by OTS staff in telephone surveys and, in a few cases, written comments, the two most significant cost factors associated with various target cleanup levels are: (1) The number of times cleanup crews have to be sent to the site; and (2) whether or not postcleanup sampling is required. The imposition of sampling costs automatically has the effect of requiring that cleanup crews have to make at least two trips to the site (at least once to clean and at least once to restore the site after the sampling results have verified cleanup). The more stringent cleanup requirements are, the more likely that more than one attempt at cleanup will have to be made and that more than one set of samples will have to be taken.

Thus, the effect of stringent cleanup requirements coupled with requirements for postcleanup verification by sampling is to (1) mitigate exposures by ensuring a greater degree of cleanup; (2) exacerbate exposures by leaving the site open for a longer period of time; and (3) increase the costs of complying with the policy. EPA weighed these countervailing considerations in establishing the various cleanup requirements in the TSCA policy. The balance between the benefits associated with potential risk reductions on the one hand, and potential additional risks and costs imposed by more stringent requirements on the other, weigh out differently depending on the potential for exposure and the degree of certainty that less stringent requirements will result in adequate cleanup.

As is discussed below, EPA has limited data on the cost of cleanup, particularly in the area of cleaning solid

surfaces such as metal or concrete to various levels. Further, the data that are available cannot readily be analyzed to determine the impact of variables other than the degree of cleanup and the extent of sampling performed at the site (e.g., amount spilled, types of ground materials or surfaces contaminated, and time lapse between spill occurrence and cleanup). EPA has evaluated available data and estimated the ranges of incremental costs associated with cleanup to various levels.

a. *Cleanup of spills in soil, sand, gravel, etc.* Available information suggests that the cost of cleanup of soil to "background" levels of PCBs can be 3 to 15 times greater than the cost of cleanup to 50 ppm. Further, since PCBs are ubiquitous in the enviroment and are found at low concentrations throughout the world (in areas where PCBs have never been used), target levels for PCBs spill cleanup which are lower than background levels in certain areas can result in very high cleanup costs. Large volumes of soil may have to be excavated for the removal of what may ultimately be only 1 to 2 pounds of PCBs. For example, there are about 2 pounds of PCBs present in four truckloads of soil containing 25 ppm PCBs. After excavation, these 2 pounds of PCBs may, under the PCB disposal regulations, be transferred to a PCB landfill for disposal.

EPA estimated the costs associated with the cleanup of a PCB spill in soil using two sets of available data on the costs of cleanup. One set of data on the costs associated with the cleanup of a 0.5 acre site contaminated with PCBs and PCB Equipment suggests that cleanup to 50 ppm would cost on the order of $105,000; cleanup to 25 ppm would cost on the order of $214,000; and cleanup to "background" levels of PCBs would cost on the order of $279,000. Using these data to estimate cleanup costs for different target levels of soil cleanup for typical PCB Capacitor spills, EPA estimates that the cleanup of a typical PCB Capacitor spill to 50 ppm would cost on the order of $2,100; cleanup to 25 ppm PCBs would cost on the order of $4,280; and cleanup to "background" levels of PCBs would cost on the order of $5,580.

EPA also estimated the costs of cleanup to various target levels using data on the cost of cleanup in actual capacitor spill situations. These data indicate that while the costs of cleanup to level between 50 and 25 ppm do not vary significantly, cleanup to levels lower than 25 and 20 ppm result in dramatically higher costs of cleanup. Based on these actual capacitor spill cleanup data, the cleanup of a typical PCB Capacitor spill to 50 or 25 ppm would cost on the order of $4,000; cleanup to 10 ppm PCBs would cost on the order of $10,000; and cleanup to background levels could cost on the order of $60,000 to $140,000.

EPA estimates that the actual incremental costs of cleaning typical capacitor spills to various levels would fall in the range between the two sets of estimates. Assuming that there are about 20,000 PCB Capacitor spills each year, EPA's estimates of the total annual cost of cleanup of PCB Capacitor spills to 50 ppm, 25 ppm, and "background" levels is $42–80 million, $80–86 million, and $112 million to over $2 billion, respectively.

Alternatively, information indicates that for lower concentration spills (i.e., spills of material containing less than 500 ppm PCBs—generally from oil-filled electrical equipment), cleanup of visible traces plus a 1 foot boundary of spills onto soil and other ground media within a few days of the spills will sufficiently ensure that PCB concentrations in the soil will be cleaned to a few parts per million. Therefore, the additional costs associated with sampling may not be justified by any incremental risk reduction where the spill is of low-concentration spills.

b. *Cleanup of PCBs spilled on surfaces.* EPA lacks data on the practicality, feasibility, and incremental costs associated with the cleanup of PCBs on hard surfaces. Comments from utility representatives as well as EPA regional office personnel suggest that costs of cleaning solid surfaces are significantly influenced by the nature of the contaminated surface (i.e., whether it is a porous surface such as concrete or an inpervious surface such as metal). Thus, cleaning porous, hard surfaces to 1 $\mu g/10cm^2$ may be very difficult, if not impossible, to achieve through generally accepted methods of cleanup (i.e., scrubbing and cleansing of surfaces) because of the penetration of PCBs below the surface.

EPA has evaluated some data on the costs of cleaning PCB-contaminated surfaces to various levels. However, all of the available data are from historical PCB spill sites which are typically more difficult to clean than fresh spills. Further, EPA's experience suggests that the relative difficulty of cleaning porous surfaces versus impervious surfaces increases as the amount of time between spill occurrence and cleanup increases.

Surface cleanup standards which are not achievable would in effect require the breakup and removal of materials such as concrete. Data on the breakup, removal, and replacement of concrete materials at historical spill sites indicate that the costs of such remedial action may range from one to several million dollars. While historical sites generally involve more extensive areas of cleanup, both in terms of PCBs absorbed into the materials and the area of contamination, these data do suggest that there are significant costs associated with a removal requirement for solid surfaces. EPA, however, has no comparative cost data on the differences in cost between cleaning solid surfaces by conventional methods versus removing solid surfaces.

An EPA-sponsored Midwest Research Institute study of the removal of PCBs from surfaces such as painted and unpainted steel, asphalt, concrete block, wood, and poured concrete demonstrates fairly clearly that a time lapse of several days before initiation of cleanup can significantly impede the efficacy of surface cleanup methods. That study also suggests that the washing of rough, porous hard surfaces with solvent is not very effective in removing the spilled askarel PCBs. Cleanup by washing/wiping within a few days following low concentration spills, however, is expected to be effective in reducing surface concentrations of PCBs to levels which will not pose unreasonable risks. This is primarily because of the small amount of PCBs actually present in most mineral oil spills.

In lieu of potentially impracticable surface cleanup standards, or removal standards, EPA also considered the option of requiring cleanup to an achievable surface cleanup standard and encapsulation with an appropriate epoxy resin or other sealant. Anecdotal information suggests that encapsulation is likely to be less costly than removal of solid surfaces by 1 to 3 orders of magnitude. While EPA believes that encapsulation can significantly reduce both dermal and inhalation exposure to residual PCB concentrations on solid surfaces, the Agency is aware of no empirical data which verify the effectiveness of encapsulants in reducing exposures. Ancedotal information provided by EPA regions and members of the regulated community raises doubts as to the long-term effectiveness of encapsulation because of the tendency of many sealants to peel or chip off over time.

In the absence of adequate data on the costs of cleaning fresh PCB spills on solid surfaces, the standards which appear in the TSCA policy for the cleanup of hard surfaces primarily reflect concerns about the potential for

exposure to these levels of residual PCBs which remain after cleanup. The TSCA policy does allow for less stringent cleanup options coupled with EPA-approved encapsulation measures where the spill occurs on porous surfaces outdoors (or on low-contact surfaces indoors in restricted-access facilities) because of concerns about the achievability of more stringent cleanup levels on porous surfaces. The encapsulation option is allowed for certain low-contact solid surfaces in order to allow the development of data on the efficacy of encapsulation in mitigating exposures to residual PCBs on solid surfaces.

2. *Conclusions about costs of cleanup.* The costs associated with the cleanup of spills of PCBs into soils and other similar materials are principally influenced by the area of contamination and the target levels set for cleanup. The lower the target level, the more testing, excavation, and removal, and the higher the cost. The cleanup of spilled PCBs in soil from PCB Transformers and Capacitors to "background" levels of PCBs costs three times as much to an order of magnitude more than cleanup to 50 ppm, and several times as much as cleanup to 25 ppm. On an annual basis, hundreds of millions of dollars are being spent for the cleanup of PCBs from transformer and capacitor spills.

EPA expects that the costs associated with the cleanup of contaminated surfaces will increase as cleanup levels or standards decrease and that at some point, excavation and removal may be the only choice to reduce PCB levels further. Data on the practicality, feasibility, and cost of cleanup to the levels discussed in this TSCA policy and data on the effectiveness and cost of encapsulation are necessary so that EPA can more accurately weigh the cost effectiveness of various surface cleanup requirements.

EPA is seeking data on the incremental costs associated with the cleanup of different types of surfaces to the levels discussed in this TSCA policy. In the absence of data to support a determination that these levels are not practically achievable at a reasonable cost (or data that support a determination that exposures will be significantly lower than those assumed by current Agency assessments), the policy includes the surface cleanup standards discussed in Unit IV.

EPA is also seeking data on the effectiveness (in terms of risk reduction), cost, and long-term durability of the use of sealants and encapsulating materials. If encapsulating materials and sealants can be demonstrated to be more cost effective than removal, EPA will retain the provisions allowing, for low-contact, porous surfaces, the use of such sealants in lieu of cleanup to more stringent standards.

C. Risk/Benefit Discussion of Cleanup Requirements

1. *Scope and general requirements of the policy.* The TSCA policy applies to spills which EPA can require to be cleaned under TSCA enforcement authority (spills of 50 ppm or greater PCBs which generally occur during EPA-regulated use, processing, distribution in commerce, or storage of PCBs) and which occur after the effective date of the policy. The policy is prospective because historical spills tend to involve more extensive areas of contamination and because many of the requirements of the policy are based on the assumption that the spill area will be cleaned or contained within 1 or 2 days of spill occurrence.

PCB is an oily material which leaves stains on soil and surfaces. While EPA recognizes that the visibility of PCBs on soils and surfaces is inversely related to the amount of time elapsed from release to discovery and that weather conditions may also influence spill visibility, EPA expects that for the majority of PCB spills, visible traces of PCBs will remain at the time of spill discovery. The exception to this rule is for spills which are undiscovered for an extended period of time and spills which are followed by adverse/severe weather conditions. In these cases, the TSCA policy requires the use of an appropriate statistical sampling scheme to define the boundaries of the spill area.

EPA believes that one of the principal ways of minimizing human and environmental exposures to spilled PCBs is to prevent the spread of spilled PCBs (e.g., by cordoning off the area) and to initiate cleanup actions as soon as practically possible. This minimizes the likelihood that materials will be spread beyond the spill area through tracking and runoff and reduces the probability of surface water and drinking water contamination. EPA believes that response time in initiating remedial action may be one of the most significant factors influencing the magnitude of risks following PCB spills, especially in residential areas.

2. *Spills of low concentrations PCBs involving less than one lb of PCBs.* Where the spilled material is relatively low in PCB concentration (i.e., containing 50 ppm or greater, but less than 500 ppm PCBs), the TSCA policy allows cleanup in accordance with procedural performance requirements (i.e., double wash/rinse for solid surfaces and removal of visible traces plus a 1-foot lateral boundary for soil and other ground media provided that the minimum depth of excavation is 10 inches) rather than requiring sampling to verify that numerical cleanup standards have been met.

The procedural requirements are based upon data indicating that for low-concentration spills, double washing/rinsing of surfaces and removal of visible traces plus a buffer on soil will successfully reduce the PCB concentration in the spill area to the numerical standards specified for the higher concentration spills. The essential difference is that for spills of low-concentration PCBs, sampling is not required to verify that numerical standards are achieved, provided that the responsible party or designated agent certifies that the cleanup has been performed in accordance with all of the requirements of the policy. The enforcement provisions of the policy specify that should the sampling data indicate that the numerical standards have not been met, or that the area cleaned does not encompass all areas of actual contamination (as determined by sampling or indicated by remaining visible traces), the regional office will require additional cleanup.

3. *Spills of 500 ppm or greater PCBs and spills of low-concentration PCBs of more than 1 lb PCBs by weight*—a. *Spills in nonrestricted access areas.* The most stringent requirements for the cleanup of spilled PCBs apply to PCB spills in residential/commercial/unrestricted access rural areas. The TSCA policy requires that materials such as household furnishings, toys, and swingsets be disposed of rather than decontaminated. Generally, these types of materials pose a high potential for exposure and are very difficult to clean. Indeed, the costs of cleanup of these types of materials to the limit of detection of PCBs (which would be required given the high potential for repeated daily exposures) would in many cases exceed replacement costs.

Soil and other similar materials in residential/commercial areas must be cleaned up to 10 ppm PCBs, and a cap of clean materials containing less than 1 ppm PCBs (the average background level for PCBs in soil) equal to a minimum of 10 inches must be placed on top of the excavated area. The OHEA risk assessment for PCBs in soil indicates that 1 to 6 ppm PCBs in 0.5 acre of residential soil is associated with a 1×10^{-5} level of oncogenic risk and that placing a 10-inch cap of clean soil reduces this level of oncogenic risk by an order of magnitude. PCB Capacitor

spills typically result in the contamination of significantly less than 0.5 acre.

For an average PCB Capacitor spill, the difference in costs associated with cleaning up PCBs to 10 ppm versus to below 1 ppm ("background" levels) in a residential area is estimated to be about $500. Assuming 9,000 PCB Capacitor spills each year in residential areas, the estimated incremental costs associated with cleanup of these spills to less than 1 ppm versus cleanup to 10 ppm is $4.5 million.

Thus, EPA believes that soil containing 10 ppm PCBs (covered by a cap containing PCBs below the practical limits of quantitation) in a residential/commercial area would not present unreasonable risks to public health or the environment.

The surface standards presented in the TSCA policy are based primarily on the potential for exposure to PCBs remaining on surfaces in residential/commercial areas and the estimated level of risk posed by these residual PCBs. EPA lacks data on the incremental costs associated with cleanup to different surface standards and is soliciting these data.

The TSCA policy does allow for less stringent surface cleanup options coupled with EPA-approved encapsulation measures where the spill occurs on porous, low-contact surfaces outdoors because of concerns about the achievability of more stringent cleanup levels on porous surfaces. The encapsulation option is allowed for low-contact solid surfaces outdoors in order to allow the development of data on the efficacy of encapsulation in mitigating exposures to residual PCBs on solid surfaces.

b. *Industrial and other restricted access spills.* Spills of PCBs in industrial areas and other restricted access locations would present lower risks than spills in residential/commercial areas because access to these areas is controlled. Inhalation exposure is considered to be the principal route of exposure to PCBs in soil, sand, or gravel in an industrial area. Dermal exposures would, however, be likely when PCBs are spilled on manned machinery and equipment. EPA believes that the level of risk posed by 25 ppm PCB in soil at a restricted access facility would not present significant risks either to the typical worker or to the general public. EPA also believes that the surface standards of 100 $\mu g/100\ cm^2$ for low-contact outdoor surfaces and 10 $\mu g/100\ cm^2$ for indoor low-contact surfaces (and vaults) and high-contact surfaces in a restricted access industrial facility would not present significant risks to workers or to the general population.

Further, there are significant costs associated with the cleanup of soil, sand, gravel, and other similar materials in an industrial facility to background levels compared to cleanup to 25 ppm PCBs. Thus, EPA believes that cleanup of soil, sand, gravel, and other similar materials in an industrial facility to 25 ppm would not present unreasonable risks to public health or the environment.

The surface standards for industrial facilities and other restricted access locations which are presented in the TSCA policy are based on the expected level of exposure to residual PCBs left on industrial surfaces after cleanup. EPA lacks data on the incremental costs associated with cleanup to different standards and is soliciting these data. The TSCA policy does allow for less stringent cleanup options coupled with EPA-approved encapsulation measures where the spill occurs on porous, low-contact surfaces because of concerns about the achievability of more stringent cleanup levels on porous surfaces. The encapsulation option is allowed for certain low-contact solid surfaces in order to allow the development of data on the efficacy of encapsulation in mitigating exposures to residual PCBs on solid surfaces.

c. *Outdoor electrical substation spills.* The least stringent requirements for the cleanup of spilled PCBs apply to spills in outdoor electrical substations. This reflects the lower potential for exposures and fewer people potentially at risk of exposures to PCBs spilled in these areas. Spills of PCBs from PCB Equipment into solid materials such as soils in electrical substations must be cleaned up to 25 ppm PCBs or to 50 ppm PCBs, provided that a label is placed in the spill area indicating that a PCB spill has occurred. The OHEA risk assessment for PCBs in soil indicates that a PCB level of 50 ppm PCBs in soil located more than 1 kilometer from a population would present less than a 1×10^{-7} level of oncogenic risk. This risk assessment assumes only inhalation exposures at distances of 1.0 kilometer (or approximately 1,093 yards) from the spill site.

The surface standards which appear in the TSCA policy are primarily based on the expected exposures and risks posed by contact with the residual PCBs. EPA lacks data on the incremental costs associated with cleanup to higher or lower levels.

D. Scope of the Policy

EPA expects the large majority of PCB spills subject to decontamination under TSCA to conform to the typical spill scenarios considered in developing the TSCA policy. However, some small percentage of spills will warrant more stringent cleanup requirements because of additional routes of exposure or significantly greater exposures than those associated with typical PCB spills. Further, there may be exceptional spill situations which require less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill which mitigate expected exposures and risks or which make cleanup to these requirements impracticable. Therefore, the policy (1) excludes certain situations from the scope of this policy; (2) discusses other spill situations which may warrant the use of EPA authority to require more stringent requirements and (3) retains EPA flexibility to allow alternative or less stringent decontamination measures when the responsible party demonstrates the presence of risk-mitigating factors or demonstrates the impracticability of applying this policy to a particular spill situation. For those exceptional spill situations which are excluded from the policy or in which EPA may exercise flexibility based on site-specific considerations, the EPA regions have the authority to determine cleanup requirements.

The TSCA policy excludes certain spill situations from the automatic applications of the numerical cleanup requirements in the policy (i.e. spills directly into water, sewers, vegetable gardens, and grazing areas, and spills which directly contaminate surface waters prior to cleanup) because those situations will always present routes of exposure to PCBs which are not associated with the typical spills considered in developing the TSCA policy. These exceptional spill situations may not always require more extensive cleanup. However, they will always require some level of site-specific analysis to determine appropriate cleanup measures.

Although EPA expects the majority of remaining spills to be subject to this policy, occasionally the site-specific characteristics (e.g., depth to ground water, type of soil, and the presence of a shallow well) may pose exceptionally high potential for ground water contamination by residual PCBs (i.e., those PCBs remaining after cleanup to the standards specified in this policy). Spills which pose a high degree of potential for ground water contamination are not automatically excluded from the policy as are spills into surface waters because the presence of such potential may not be

readily apparent. EPA feels that automatically excluding such spills from the scope of the policy could result in the delay of cleanup—a particularly undesirable outcome if potential ground water contamination is a significant concern. The Agency will, however, require cleanup to more stringent decontamination standards upon making a determination that such additional cleanup is necessary because of ground water concerns associated with residual contamination based upon comparison of the site characteristics to ground water modeling and exposure assessments which have been developed by EPA in support of this policy.

Additionally, spill situations involving significantly larger areas of contamination than those assumed in developing this policy (e.g., <0.5 acre in soil and 550 ft^2 on indoor surfaces), spills in areas involving repeated daily contact such that the potential for dermal contact may be significantly higher than assumed in developing this policy (e.g., spills resulting from violent equipment rupture during which PCDFs and/or PCDDs were formed, and spills onto farmland on which root crops are grown) may require more stringent levels of cleanup. In such situations, the Regional Administrator may require cleanup in addition to that required by the policy. In those circumstances, the Regional Administrator must notify the Director, Office of Toxic Substances, of his finding and the basis for the finding.

The TSCA policy also retains EPA's flexibility to allow less stringent, or alternative decontamination measures based upon site-specific considerations. EPA will exercise this flexibility if the responsible party demonstrates that cleanup to the numerical decontamination levels is clearly unwarranted because of risk-mitigating factors, or that compliance with the procedural requirements or numerical standards in the policy is impracticable at a particular site. For example, the responsible party may show that a dirt road need not be decontaminated to the levels in this policy because exposure to residual PCB concentrations on a dirt road will be significantly mitigated when the road is paved with concrete or asphalt in the immediate future. Alternatively, the responsible party may demonstrate that cleanup to the numerical standards in the policy may threaten the structural integrity of major equipment installations or buildings.

For purposes of delineating the scope of the TSCA policy, as well as to provide EPA regional offices and the regulated community with guidance on whether a particular spill may require more stringent standards for cleanup, EPA has performed some preliminary analyses of these potentially higher-risk spill situations. EPA evaluated the exposures and risks associated with these potential higher-risk situations using reasonable worst-case assumptions to identify cases where strict application of the standards in this policy may be inappropriate. In addition, EPA believes that some spill situations may require special action (e.g., additional immediate actions to prevent contamination of sewers where there is a real potential for such contamination).

1. *Spills into sewers.* EPA has not assessed the exposures associated with the release of PCBs into sewers because of the lack of information about the behavior of spilled PCBs in a system of sewer pipes. Being denser than water, PCBs may collect in depressions and irregularities in the sewer pipes, providing a long-term source of release of PCBs into the environment. On the other hand, the PCBs may be carried from place to place in the sewer system. Thus, there is no method for estimating which segments of the system are contaminated, what the concentration of PCBs is, or how long the PCBs will remain in the system. Because of the difficulty of evaluting the behavior of PCBs in sewer systems and because of the practical problems of decontaminating a sewer system, PCB spills into sewage are not covered by this policy. Each regional office will determine the requirements for adequate cleanup of sewer systems, treatment works, and sewage contaminated with PCBs on a case-by-case basis.

2. *Spills which may result in ingestion exposure through drinking water and fish.* To evaluate the potential for exposures through the ingestion of drinking water and/or fish contaminated with PCBs, EPA looked at four spill situations using reasonable worst-case assumptions: (1) PCBs are spilled into a pond and the sediment is cleaned to 10 ppm; (2) PCBs are spilled into a river and the sediment is cleaned to 10 ppm; (3) PCBs are spilled on the bank of a stream and the soil is cleaned to 25 ppm; and (4) PCBs are spilled on soil and cleaned to 25 ppm, assuming that the PCBs will enter ground water.

Preliminary results indicate that where PCBs enter surface water in a pond, the ingestion of fish and/or drinking water from the pond after the sediment has been cleaned to 10 ppm in accordance with the policy may result in significant human exposures. While rivers have higher flow rates than ponds, so that cleanup of river sediment to 10 ppm PCBs may not pose significant human exposures, PCB contamination in surface water poses important considerations in addition to the risks associated with residual PCB concentrations in sediment, in much the same way as sewer contamination. Thus, all spills directly into waterways and spills which contaminate waterways before cleanup are excluded from the TSCA policy.

Where PCBs are spilled near a waterway and the soil is cleaned to 25 ppm PCBs, PCBs can enter surface water through runoff from the contaminated bank. (EPA assumed that runoff into the stream occurs only after the spill area has been cleaned to 25 ppm.) Based on reasonable worst-case assumptions, the consumption of drinking water and/or fish from the stream for 70 years will not pose risks of concern and are therefore included in the scope of the policy. However, should the spill contaminate surface water cleanup, the spill must be cleaned to site-specific requirements. Therefore, the responsible party should take special measures to contain the spill area and prevent the spread of PCBs into the waterway.

In looking at the possible exposures associated with soil cleaned to 25 ppm through the ingestion of drinking water from contaminated ground water, the climate, soil and ground water configuration were assumed to be such as to maximize PCB concentrations in ground water. Significant risks may be posed by the ingestion of drinking water from very shallow wells (i.e., dug wells taking in water at the source of loading) in areas where soil characteristics and depth to aquifer maximize the potential for leaching into ground water. However, the ingestion of drinking water from a well located a horizontal distance of 50 meters from the spill site in these areas does not appear to pose significant risks. Thus, while the majority of spills will not result in unreasonable risks of human exposure due to ground water contamination, some unique spill scenarios will pose potential ingestion exposure through ground water contamination.

The TSCA policy specifically reserves EPA's authority to impose more stringent cleanup requirements in cases where site characteristics present special risks of ingestion of PCBs through ground water contamination. These spills are not automatically excluded from application of the policy because the potential for ground water contamination may not be readily apparent.

3. *Ingestion of milk from dairy cattle grazing on land contaminated with PCBs.* Using reasonable worst-case estimates, the Agency evaluated the potential risks to humans drinking milk from cattle which grazed on farmland where a PCB spill has been cleaned to 25 ppm. In the event of a spill on farmland, grazing dairy cattle can ingest the PCB-contaminated soil by consuming soil while grazing and from eating plants and roots from a PCB-contaminated site. The cattle can then accumulate unmetabolized residues of the PCBs in milk fat and excrete them through milk. Assuming that the contaminated milk is consumed by the farm residents, worst-case risk estimates indicate that reducing the PCB concentration in the soil to 10 or 25 ppm PCBs may not be adequate to prevent aganist unreasonable risks to human health.

4. *Ingestion of vegetables grown on contaminated home gardens and farmland.* EPA performed some preliminary analyses of the risks posed by the consumption of vegetables grown on a spill area cleaned to 25 ppm PCBs in the case of farmland and 10 ppm in the case of residential gardens. Assuming that vegetables grown on that garden or farm are used to provide the entire vegetable component of the diet of the site residents, cleaning soil to the levels in the policy may not be adequate. Vegetables are more likely to become contaminated through contact with contaminated dirt rather than through plant uptake. Thus, EPA believes that the potential for exposure to spilled PCBs through ingestion of crops grown on-site is greatest where the vegetables are root crop (e.g., carrots and potatoes).

5. *Exposure from larger spills.* In the above situations, the Agency focused on routes or ingestion exposure. The Agency has also evaluated situations which may significantly increase dermal or inhalation exposures. A principal factor in determining the magnitude of inhalation exposure is the size of the spill area. In estimating the risks associated with the cleanup levels in the policy for typical spills from electrical equipment, EPA relies on a risk assessment which assumes a contaminated area of 0.5 acre (see discussion in Unit VII.A.3.). Since the area of the typical spill addressed by this policy is expected to be ½₀ of the size assumed in the risk assessment, EPA believes that the cleanup standards in this policy sufficiently protect against unreasonable risks from inhalation exposure to PCBs remaining after the cleanup of a spill from electrical equipment. Cleanup standards for larger spills, that is, greater than 0.5 acre, would be established by the EPA regional office after a consideration of both the level of risk posed by cleanup to different levels and the incremental costs associated with such cleanup.

E. Issues

As is apparent in the discussion under Unit VII.A, there are gaps in the information which was available to the Agency in developing the TSCA policy, particularly in the area of cleanup costs. Given the limited data available to the Agency in developing a PCB Spills Cleanup Policy under the TSCA unreasonable risk standard, EPA has generally taken an environmentally conservative approach by establishing cleanup requirements based on risk and exposure considerations, and by excluding certain potentially higher-risk spill scenarios from the scope of the policy.

In a few areas where available data support the conclusion that less restrictive requirements will not compromise the protection of human health or the environment, the Agency has allowed less restrictive cleanup options (i.e., the exclusion of low-concentration spills from sampling requirements and the encapsulation option for spills on low-contact, porous surfaces). One purpose of allowing such options is to provide an opportunity for the development of additional information on the relative efficacy and costs of such options. EPA expects that the regulated industry will make good faith efforts to submit additional data gathered under the TSCA policy.

1. *Decontamination of surface.* The TSCA policy includes surface standards (in micrograms (μg) per 100 square centimeters (100 cm^2)) for cleanup of PCB spills on hard surfaces such as wood, concrete and asphalt, and impervious surfaces such as metal or glass. For spills of PCBs at concentrations of 50 ppm or greater but less than 500 ppm onto hard or impervious surfaces in other than residential/commercial areas, this policy allows cleanup by double rinsing with an appropriate solvent.

The consensus proposal submitted by EDF, NRDC, EEI, NEMA, and CMA in May 1985 proposed that surfaces in residential areas be cleaned to 100 μg/100 cm^2. The consensus further proposed that surfaces in all other areas be cleaned either to 100 μg/100 cm^2 or triple rinsed at the discretion of the responsible party. A revised consensus proposal submitted in October 1986 modified the proposed surface standards to 10 μg/100 cm^2 for impervious surfaces in areas other than outdoor electrical substations. The revised proposal maintained the 100 μg/100 cm^2 level for all porous surfaces, arguing the infeasibility of cleaning to lower levels on porous surfaces.

After reviewing the consensus proposal, the Agency contemplated requiring that potential high-contact surfaces be cleaned to 10 μg/100 cm^2 and that spills of 500 ppm or greater on low-contact surfaces be cleaned to 100 μg/100 cm^2. The Agency further contemplated allowing the triple-rinse option for spills of 500 ppm or greater in reduced access areas and for all spills onto surfaces in outdoor electrical substations.

Lacking adequate information with which to assess potential exposures to surfaces cleaned to those levels, the Agency initiated some studies to (1) evaluate the risks posed by the 10 μg/100 cm^2 and 100 μg/100 cm^2 and (2) test the efficacy of rinsing/washing as a cleanup measure. The results of these studies indicate (a) that high contact surfaces such as those in residential play areas or manually operated machinery may require surface standards more stringent than the 10 μg to 100 μg/100 cm^2 standards and (b) that while even one wash or rinse of a solid surface would be adequate for mineral oil spills (50 to 499 ppm PCBs), the wash/rinse procedural performance standard is relatively ineffective in removing higher concentration PCBs from porous surfaces such as concrete block, wood, and asphalt. Presented below is additional detail on these preliminary studies and requests for data and information pertaining to the cleanup of surfaces.

2. *Surface wiping as a cleanup method.* EPA began the study with the goal of evaluating the effectiveness of a triple-rinse performance standard for decontamination of various types of surfaces where spills of askarel or mineral oil contaminated with PCBs have occurred. The cleaning agents tested were a water-based industrial cleaner (Penetone Power Cleaner 155) and kerosene, which are both widely used. A set of six rinses were performed on steel, wood, concrete, and asphalt 1 day after spilling a known amount of PCBs on the surfaces. Another set of six rinses was performed on each surface 8 days after spilling a known amount of PCBs on the surface.

The rinses were relatively effective in cleaning askarel spills on steel and in cleaning mineral oil from all surfaces (because of the low initial concentration of PCBs in mineral oil). However, six rinses with the industrial cleaner did not

successfully remove askarel fluid from asphalt, wood, or concrete. Further, the PCBs and the solvent washed through the wood, concrete, and asphalt, and distributed the PCBs into the material. This has caused EPA to question the advisability of setting a surface concentration for nonimpervious materials. Absent information on whether or not the PCBs absorbed into the material later come back to the surface and become available for exposure, EPA must assume that the absorbed PCBs provide a continuing source of exposure until the total amount of PCBs in the material is depleted.

EPA also found that the Penetone Power Cleaner was significantly less effective than the organic solvent in reducing the concentration of PCBs. Anecdotal information, however, suggests that the detergent cleaner may be more effective on soiled surfaces because of the tendency of PCBs to bind to dirt.

These observations have led to some determinations and raised several issues. Any comments or data in these areas are welcome.

a. EPA has determined that a procedural performance specifying one to three washes/rinses on solid surfaces within a few days after the spill occurs will result in adequate decontamination of mineral oil (50 to 499 ppm PCBs) spills on hard surfaces (including wood, asphalt, and concrete).

b. EPA has determined that water-based solvents may not be effective in removing PCBs from hard surfaces. Seven days after the occurrence of a spill, the efficacy of water-based rinses appeared to decrease markedly even on steel (some of the reduced effectiveness of the water-based solvent after 7 days may be due to the loss of PCBs from the surface through volatilization). EPA is currently performing a second phase of the solvent-rinse study with an organic solvent used widely in industry.

c. EPA has determined that when a spill of PCBs occurs on nonimpervious hard surfaces, the PCBs are absorbed into the material and may later become available for exposure. In the absence of adequate information, the Agency must presume that these PCBs do provide a source of exposure. The Agency solicits any available data in this area.

d. Therefore, for PCB spills on nonimpervious surfaces, the Agency considered (1) requiring removal and decontamination to a ppm standard, or (2) some combination of a wipe standard and encapsulation. EPA solicits available information on the costs of removing hard sufaces and the efficacy of encapsulation in preventing future exposures to PCBs which have been absorbed into materials such as concrete, wood, or asphalt. In its spills cleanup policy the Agency has allowed an encapsulation option on low contact surfaces for iterative purposes. EPA may not retain such an option if no information on the relative cost, effectiveness, and durability of encapsulation becomes available.

3. *Cost of cleanup.* The cost estimates for decontamination of soil and other solid materials to various levels (as discussed under Unit VII.B) were derived from limited available information. While the Agency has received information on the costs of actual cleanups, it is difficult to extrapolate information from these data because very little is known about the cleanup methods used, the time lapse between the spill and the cleanup effort, the amount spilled, and the size of the spill area.

In order to develop a more sound data base for comparing the costs of cleanup to various levels in soil, the Agency modeled the vertical and lateral spread of spilled PCBs in soil over time, using assumptions which maximize the spread of PCBs. These data on the distribution of PCB concentrations in the soil are being used to solicit information from cleanup firms on the incremental cost of cleanup to various levels.

Any available data on the incremental costs of decontamination to various levels are welcome. Such data will be most helpful if accompanied by the following information: (1) The amount and concentration of PCBs spilled, (2) the area and depth of the original contamination and the area cleaned, (3) the amount of soil or other material removed or the type of cleanup performed on hard surfaces, (4) postcleanup sampling data, (5) the amount of time between spill occurrence and initiation of cleanup, and (6) some description of the cleanup procedures (e.g., initial efforts to contain the spill or methods used to prevent the spreading of contamination during cleanup efforts). EPA especially needs data on the costs associated with cleanup of hard surfaces (see discussion in previous unit).

4. *Cleanup standards for higher-risk situations.* The discussion under Unit VII.D details the Agency's rationale for limitations on the scope of the policy. The Agency believes that some small percentage of spills will warrant more stringent cleanup requirements than specified in the TSCA policy because of additional routes of exposure or significantly greater exposures than those associated with typical PCB spills.

Therefore, certain spill situations are excluded from the scope of this policy. The spill situations which the TSCA policy excludes from automatic application of the numerical cleanup requirements in the policy (i.e., spills directly into water, sewers, vegetable gardens, and grazing areas and spills which contaminate surface waters prior to cleanup) are those which will always present routes of exposure to PCBs which are not associated with the typical spills considered in developing the TSCA policy. The TSCA policy indicates exceptional spill situations may not always require more extensive cleanup. However, they will always require some level of site-specific analysis to determine appropriate cleanup measures.

In addition, the TSCA policy discusses other spill situations which may warrant the use of EPA authority to require more stringent requirements (e.g., where depth to ground water, type of soil, and the presence of a shallow well may pose exceptionally high potential for ground water contamination by residual PCBs; spill situations involving significantly larger areas of contamination than those assumed in developing this policy; spills resulting from violent equipment rupture during which PCDFs and/or PCDDs were formed; and spills onto farmland on which root crops are grown). The TSCA policy provides that in such situations the Regional Administrator may require cleanup in addition to that required by the TSCA policy.

EPA does not currently have sufficient information on the factors which must be considered in determining the type and degree of cleanup in such situations. Therefore, while EPA headquarters will provide guidance to the EPA regional offices to the extent possible on a case-by-case basis, the TSCA policy does not specify cleanup measures for these spill scenarios. EPA solicits available data on such spill situations in order to provide better guidance to the regions and to develop uniform guidance for such situations where appropriate.

This document was submitted for review to the Office of Management and Budget (OMB).

Other Statutory Requirements

Regulatory Flexibility Act

The TSCA policy will have an insignificant impact on small entities as described in the Regulatory Flexibility Act (5 U.S.C. 601 et seq.).

Paperwork Reduction Act

The TSCA policy reiterates certain recordkeeping requirements for the disposal of PCBs which were approved under OMB control number 2070–0008. Some additional recordkeeping and reporting will be added through the rulemaking process; these requirements will be submitted to OMB for clearance.

List of Subjects in 40 CFR Part 761

Hazardous substances, Labeling, Polychlorinated biphenyls, Recordkeeping and reporting requirements, Environmental protection.

Dated: March 20, 1987.

Lee M. Thomas,

Administrator.

PART 761—[AMENDED]

Therefore, 40 CFR Chapter I Part 761 is amended as follows:

1. The authority citation for Part 761 is revised to read as follows:

Authority: 15 U.S.C. 2605, 2607, and 2611; Subpart G is also issued under 15 U.S.C. 2614 and 2616.

2. Subpart G, consisting at this time of §§ 761.120, 761.123, 761.125, 761.130, and 761.135, is added to read as follows:

Subpart G—PCB Spill Cleanup Policy

Sec.

Subpart G—PCB Spill Cleanup Policy

§ 761.120 Scope.

(a) *General.* This policy establishes criteria EPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. The policy applies to spills which occur after May 4, 1987.

(1) Existing spills (spills which occurred prior to May 4, 1987, are excluded from the scope of this policy for two reasons:

(i) For old spills which have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill in accordance with requirements imposed by EPA through its regional offices, nor is this policy intended to interfere with ongoing litigation of enforcement actions which bring into issue PCB spills cleanup.

(ii) EPA recognizes that old spills which are discovered after the effective date of this policy will require site-by-site evaluation because of the likelihood that the site involves more pervasive PCB contamination than fresh spills and because old spills are generally more difficult to clean up than fresh spills (particularly on porous surfaces such as concrete). Therefore, spills which occurred before the effective date of this policy are to be decontaminated to requirements established at the discretion of EPA, usually through its regional offices.

(2) EPA expects most PCB spills subject to the TSCA PCB regulations to conform to the typical spill situations considered in developing this policy. This policy does, however, exclude from application of the final numerical cleanup standards certain spill situations from its scope: Spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable gardens. These types of spills are subject to final cleanup standards to be established at the discretion of the regional office. These spills are, however, subject to the immediate notification requirements and measures to minimize further environmental contamination.

(3) For all other spills, EPA generally expects the decontamination standards of this policy to apply. Occasionally, some small percentage of spills covered by this policy may warrant more stringent cleanup requirements because of additional routes of exposure or significantly greater exposures than those assumed in developing the final cleanup standards of this policy. While the EPA regional offices have the authority to require additional cleanup in these circumstances, the Regional Administrator must first make a finding based on the specific facts of a spill that additional cleanup must occur to prevent unreasonable risk. In addition, before a final decision is made to require additional cleanup, the Regional Administrator must notify the Director, Office of Toxic Substances at Headquarters of his/her finding and the basis for the finding.

(4) There may also be exceptional spill situations that requires less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable.

(b) *Spills that may require more stringent cleanup levels.* For spills within the scope of this policy, EPA generally retains, under § 761.135, the authority to require additional cleanup upon finding that, despite good faith efforts by the responsible party, the numerical decontamination levels in the policy have not been met. In addition, EPA foresees the possibility of exceptional spill situations in which site-specific risk factors may warrant additional cleanup to more stringent numerical decontamination levels than are required by the policy. In these situations, the Regional Administrator has the authority to require cleanup to levels lower than those included in this policy upon finding that further cleanup must occur to prevent unreasonable risk. The Regional Administrator will consult with the Director, Office of Toxic Substances, prior to making such a finding.

(1) For example, site-specific characteristics, such as short depth to ground water, type of soil, or the presence of a shallow well, may pose exceptionally high potential for ground water contamination by PCBs remaining after cleanup to the standards specified in this policy. Spills that pose such a high degree of potential for ground water contamination have not been excluded from the policy under paragraph (d) of this section because the presence of such potential may not be readily apparent. EPA feels that automatically excluding such spills from the scope of the policy could result in the delay of cleanup—a particularly undesirable outcome if potential ground water contamination is, in fact, a significant concern.

(2) In those situations, the Regional Administrator may require cleanup in addition to that required under § 761.125 (b) and (c). However, the Regional Administrator must first make a finding, based on the specific facts of a spill, that additional cleanup is necessary to prevent unreasonable risk. In addition, before making a final decision on additional cleanup, the Regional Administrator must notify the Director of the Office of Toxic Substances of his finding and the basis for the finding.

(c) *Flexibility to allow less stringent or alternative requirements.* EPA retains the flexibility to allow less stringent or alternative decontamination measures based upon site-specific considerations. EPA will exercise this flexibility if the responsible party demonstrates that cleanup to the numerical decontamination levels is clearly unwarranted because of risk-mitigating factors, that compliance with the procedural requirements or numerical standards in the policy is impracticable at a particular site, or that site-specific characteristics make the costs of cleanup prohibitive. The Regional Administrator will notify the Director of OTS of any decision and the basis for the decision to allow less stringent cleanup. The purpose of this notification

is to enable the Director of OTS to ensure consistency of spill cleanup standards under special circumstances across the regions.

(d) *Excluded spills.* (1) Although the spill situations in paragraphs (d)(2) (i) through (vi) of this section are excluded from the automatic application of final decontamination standards under § 761.125 (b) and (c), the general requirements under § 761.125(a) do apply to these spills. In addition, all of these excluded situations require practicable, immediate actions to contain the area of contamination. While these situations may not always require more stringent cleanup measures, the Agency is excluding these scenarios because they will always involve significant factors that may not be adequately addressed by cleanup standards based upon typical spill characteristics.

(2) For the spill situations in paragraphs (d)(2)(i) through (vi) of this section, the responsible party shall decontaminate the spill in accordance with site-specific requirements established by the EPA regional offices.

(i) Spills that result in the direct contamination of surface waters (surface waters include, but are not limited to, "waters of the United States" as defined in Part 122 of this chapter, ponds, lagoons, wetlands, and storage reservoirs).

(ii) Spills that result in the direct contamination of sewers or sewage treatment systems.

(iii) Spills that result in the direct contamination of any private or public drinking water sources or distribution systems.

(iv) Spills which migrate to and contaminate surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with this policy.

(v) Spills that contaminate animal grazing lands.

(vi) Spills that contaminate vegetable gradens.

(e) *Relationship of policy to other statutes.* (1) This policy does not affect cleanup standards or requirements for the reporting of spills imposed, or to be imposed, under other Federal statutory authorities, including but not limited to, the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). Where more than one requirement applies, the stricter standard must be met.

(2) The Agency recognizes that the existence of this policy will inevitably result in attempts to apply the standards to situations within the scope of other statutory authorities. However, other statutes require the Agency to consider different or alternative factors in determining appropriate corrective actions. In addition, the types and magnitudes of exposures associated with sites requiring corrective action under other statutes often involve important differences from those expected of the typical, electrical equipment-type spills considered in developing this policy. Thus, cleanups under other statutes, such as RCRA corrective actions or remedial and response actions under SARA may result in different outcomes.

§ 761.123 Definitions.

For purposes of this policy, certain words and phrases are used to denote specific materials, procedures, or circumstances. The following definitions are provided for purposes of clarity and are not to be taken as exhaustive lists of situations and materials covered by the policy.

"Double wash/rinse" means a minimum requirement to cleanse solid surfaces (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight). A volume of PCB-free fluid sufficient to cover the contaminated surface completely must be used in each wash/rinse. The wash/rinse requirement does not mean the mere spreading of solvent or other fluid over the surface, nor does the requirement mean a once-over wipe with a soaked cloth. Precautions must be taken to contain any runoff resulting from the cleansing and to dispose properly of wastes generated during the cleansing.

"High-concentration PCBs" means PCBs that contain 500 ppm or greater PCBs, or those materials which EPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing.

"High-contact industrial surface" means a surface in an industrial setting which is repeatedly touched, often for relatively long periods of time. Manned machinery and control panels are examples of high-contact industrial surfaces. High-contact industrial surfaces are generally of impervious solid material. Examples of low-contact industrial surfaces include ceilings, walls, floors, roofs, roadways and sidewalks in the industrial area, utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components, indoor vaults, and pipes.

"High-contact residential/commercial surface" means a surface in a residential/commercial area which is repeatedly touched, often for relatively long periods of time. Doors, wall areas below 6 feet in height, uncovered flooring, windowsills, fencing, bannisters, stairs, automobiles, and children's play areas such as outdoor patios and sidewalks are examples of high-contact residential/commercial surfaces. Examples of low-contact residential/commercial surfaces include interior ceilings, interior wall areas above 6 feet in height, roofs, asphalt roadways, concrete roadways, wooden utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components (e.g., aluminum/vinyl siding, cinder block, asphalt tiles), and pipes.

"Impervious solid surfaces" means solid surfaces which are nonporous and thus unlikely to absorb spilled PCBs within the short period of time required for cleanup of spills under this policy. Impervious solid surfaces include, but are not limited to, metals, glass, aluminum siding, and enameled or laminated surfaces.

"Low-concentration PCBs" means PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials which EPA requires to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid).

"Nonimpervious solid surfaces" means solid surfaces which are porous and are more likely to absorb spilled PCBs prior to completion of the cleanup requirements prescribed in this policy. Nonimpervious solid surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard.

"Nonrestricted access areas" means any area other than restricted access, outdoor electrical substations, and other restricted access locations, as defined in this section. In addition to residential/commercial areas, these areas include unrestricted access rural areas (areas of low density development and population where access is uncontrolled by either man-made barriers or naturally occurring barriers, such as rough terrain, mountains, or cliffs).

"Other restricted access (nonsubstation) locations" means areas other than electrical substations that are at least 0.1 kilometer (km) from a residential/commercial area and limited by man-made barriers (e.g., fences and walls) to substantially limited by naturally occurring barriers such as mountains, cliffs, or rough terrain. These areas generally include industrial

facilities and extremely remote rural locations. (Areas where access is restricted but are less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.)

"Outdoor electrical substations" means outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power Outdoor electrical substations restrict public access by being fenced or walled off as defined under § 761.30(1)(1)(ii). For purposes of this TSCA policy, outdoor electrical substations are defined as being located at least 0.1 km from a residential/commercial area. Outdoor fenced-off and restricted access areas used in the transmission and/or distribution of electrical power which are located less than 0.1. km from a residential/commercial area are considered to be residential/commercial areas.

"PCBs" means polychlorinated biphenyls as defined under § 761.3. As specified under § 761.1(b), no requirements may be avoided through dilution of the PCB concentration.

"Requirements and standards" means:

(1) "Requirements" as used in this policy refers to both the procedural responses and numerical decontamination levels set forth in this policy as constituting adequate cleanup of PCBs.

(2) "Standards" refers to the numerical decontamination levels set forth in this policy.

"Residential/commercial areas" means those areas where people live or reside, or where people work in other than manufacturing or farming industries. Residential areas include housing and the property on which housing is located, as well as playgrounds, roadways, sidewalks, parks, and other similar areas within a residential community. Commercial areas are typically accessible to both members of the general public and employees and include public assembly properties, institutional properties, stores, office buildings, and transportation centers.

"Responsible party means the owner of the PCB equipment, facility, or other source of PCBs or his/her designated agent (e.g., a facility manager or foreman).

"Soil" means all vegetation, soils and other ground media, including but not limited to, sand, grass , gravel, and oyster shells. It does not include concrete and asphalt.

"Spill" means both intentional and unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. This policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration of PCBs in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm, but less than 500 ppm PCBs and is subject to the relevant requirements of this policy.

"Spill area" means the area of soil on which visible traces of the spill can be observed plus a buffer zone of 1 foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area or on which visible traces of the spilled material are observed is included in the spill area. This area represents the minimum area assumed to be contaminated by PCBs in the absence of precleanup sampling data and is thus the minimum area which must be cleaned.

"Spill boundaries" means the actual area of contamination as determined by postcleanup verification sampling or by precleanup sampling to determine actual spill boundaries. EPA can require additional cleanup when necessary to decontaminate all areas within the spill boundaries to the levels required in this policy (e.g., additional cleanup will be required if postcleanup sampling indicates that the area decontaminated by the responsible party, such as the spill area as defined in this section, did not encompass the actual boundaries of PCB concentration).

"Standard wipe test" means, for spills of high-concentration PCBs on solid surfaces, a cleanup to numerical surface standards and sampling by a standard wipe test to verify that the numerical standards have been met. This definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard-size template (10 centimeters (cm) x 10 cm) will be used to delineate the area of cleanup; the wiping medium will be a gauze pad or glass wool of known size which has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air. EPA strongly recommends that the gauze (or glass wool) be prepared with hexane in the laboratory and that the wiping medium be stored in sealed glass vials until it is used for the wipe test. Further, EPA requires the collection and testing of field blanks and replicates.

§ 761.125 Requirements for PCB spill cleanup.

(a) *General.* Unless expressly limited, the reporting, disposal, and precleanup sampling requirements in paragraphs (a)(1) through (3) of this section apply to all spills of PCBs at concentrations of 50 ppm or greater which are subject to decontamination requirements under TSCA, including those spills listed under § 761.120(b) which are excluded from the cleanup standards at paragraphs (b) and (c) of this section.

(1) *Reporting requirements.* The reporting in paragraph (a)(1) (i) through (iv) of this section is required in addition to applicable reporting requirements under the Clean Water Act (CWA) or the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). For example, under the National Contingency Plan all spills involving 10 pounds or more of PCB material must currently be reported to the National Response Center (1–800–424–8802). The requirements in paragraphs (a)(1) (i) through (iv) of this section are designed to be consistent with existing reporting requirements to the extent possible so as to minimize reporting burdens on governments as well as the regulated community.

(i) Where a spill directly contaminates surface water, sewers, or drinking water supplies, as discussed under § 761.120(d), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and obtain guidance for appropriate cleanup measures in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(ii) Where a spill directly contaminates grazing lands or vegetable gardens, as discussed under § 761.120(d), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and proceed with the immediate requirements specified under paragraph (b) or (c) of this section, depending on the source of the spill, in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(iii) Where a spill exceeds 10 pounds of PCB material (generally 1 gallon of PCB dielectric fluid) and is not addressed in paragraph (a)(1) (i) or (ii) of this section, the responsible party will notify the appropriate EPA regional office and proceed to decontaminate the spill area in accordance with this TSCA policy in the shortest possible time after

discovery, but in no case later than 24 hours after discovery. For purposes of the notification requirement, the 10 pounds are measured by the weight of the PCB-containing material spilled rather than by the weight of only the PCBs spilled.

(iv) Spills of 10 pounds or less, which are not addressed in paragraph (a)(1) (i) or (ii) of this section, must be cleaned up in accordance with this policy (in order to avoid EPA enforcement liability), but notification of EPA is not required.

(2) *Disposal of cleanup debris and materials.* All concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under this policy shall be properly stored, labeled, and disposed of in accordance with the provisions of § 761.60.

(3) *Determination of spill boundaries in the absence of visible traces.* For spills where there are insufficient visible traces yet there is evidence of a leak or spill, the boundaries of the spill are to be determined by using a statistically based sampling scheme.

(b) *Requirements for cleanup of low-concentration spills which involve less than 1 pound of PCBs by weight (less than 270 gallons of untested mineral oil)*—(1) *Decontamination requirements.* Spills of less than 270 gallons of untested mineral oil, low-concentration PCBs, as defined under § 761.123, which involve less than 1 pound of PCBs by weight (e.g., less than 270 gallons of untested mineral oil containing less than 500 ppm PCBs) shall be cleaned in the following manner:

(i) Solid surfaces must be double washed/rinsed (as defined under § 761.123); except that all indoor, residential surfaces other than vault areas must be cleaned to 10 micrograms per 100 square centimeters (10 $\mu g/100\ cm^2$) by standard commercial wipe tests.

(ii) All soil within the spill area (i.e., visible traces of soil and a buffer of 1 lateral foot around the visible traces) must be excavated, and the ground be restored to its original configuration by back-filling with clean soil (i.e., containing less than 1 ppm PCBs).

(iii) Requirements of paragraph (b)(1) (i) and (ii) of this section must be completed within 48 hours after the responsible party was notified or became aware of the spill.

(2) *Effect of emergency or adverse weather.* Completion of cleanup may be delayed beyond 48 hours in case of circumstances including but not limited to, civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergency, has left insufficient visible traces, the responsible party must use a statistically based sampling scheme to determine the spill boundaries as required under paragraph (a)(3) of this section.

(3) *Records and certification.* At the completion of cleanup, the responsible party shall document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years. The records and certification shall consist of the following:

(i) Identification of the source of the spill (e.g., type of equipment).

(ii) Estimated or actual date and time of the spill occurrence.

(iii) The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

(iv) A brief description of the spill location.

(v) Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.

(vi) A brief description of the solid surfaces cleaned and of the double wash/rinse method used.

(vii) Approximate depth of soil excavation and the amount of soil removed.

(viii) A certification statement signed by the responsible party stating that the cleanup requirements have been met and that the information contained in the record is true to the best of his/her knowledge.

(ix) While not required for compliance with this policy, the following information would be useful if maintained in the records:

(A) Additional pre- or post-cleanup sampling.

(B) The estimated cost of the cleanup by man-hours, dollars, or both.

(C) *Requirements for cleanup of high-concentration spills and low-concentration spills involving 1 pound or more PCBs by weight (270 gallons or more of untested mineral oil).* Cleanup of low-concentration spills involving 1 lb or more PCBs by weight and of all spills of materials other than low-concentration materials shall be considered complete if all of the immediate requirements, cleanup standards, sampling, and recordkeeping requirements of paragraphs (c) (1) through (5) of this section are met.

(1) *Immediate requirements.* The four actions in paragraphs (c)(1) (i) through (iv) of this section must be taken as quickly as possible and within no more than 24 hours (or within 48 hours for PCB Transformers) after the responsible party was notified or became aware of the spill, except that actions described in paragraphs (c)(1) (ii) through (iv) of this section can be delayed beyond 24 hours if circumstances (e.g., civil emergency, hurricane, tornado, or other similar adverse weather conditions, lack of access due to physical impossibility, or emergency operating conditions) so require for the duration of the adverse conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Owners of spilled PCBs who have delayed cleanup because of these types of circumstances must keep records documenting the fact that circumstances precluded rapid response.

(i) The responsible party shall notify the EPA regional office and the NRC as required by § 761.125(a)(1) or by other applicable statutes.

(ii) The responsible party shall effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces plus a 3-foot buffer and place clearly visible signs advising persons to avoid the area to minimize the spread of contamination as well as the potential for human exposure.

(iii) The responsible party shall record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area. If there are no visible traces, the responsible party shall record this fact and contact the regional office of the EPA for guidance in completing statistical sampling of the spill area to establish spill boundaries.

(iv) The responsible party shall initiate cleanup of all visible traces of the fluid on hard surfaces and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc.

(v) If there has been a delay in reaching the site and there are insufficient visible traces of PCBs remaining at the spill site, the responsible party must estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspect contaimination. The responsible party must then utilize a statistically based sampling scheme to identify the boundaries of the spill area as soon as practicable.

(vi) Although this policy requires certain immediate actions, as described in paragraphs (c)(1)(i) through (iv) of this section, EPA is not placing a time limit on completion of the cleanup effort since the time required for completion will vary from case to case. However, EPA expects that decontamination will be achieved promptly in all cases and will consider promptness of completion in determining whether the responsible party made good faith efforts to clean up in accordance with this policy.

(2) *Requirements for decontaminating spills in outdoor electrical substations.* Spills which occur in outdoor electrical substations, as defined under § 761.123, shall be decontaminated in accordance with paragraphs (c)(2)(i) and (ii) of this section. Conformance to the cleanup standards under paragraphs (c)(2)(i) and (ii) of this section shall be verified by post-cleanup sampling as specified under § 761.130. At such times as outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the nonrestricted access requirements under paragraph (c)(4) of this section.

(i) Contaminated solid surfaces (both impervious and non-impervious) shall be cleaned to a PCB concentration of 100 micrograms (μg)/100 square centimeters (cm^2) (as measured by standard wipe tests).

(ii) At the option of the responsible party, soil contaminated by the spill will be cleaned either to 25 ppm PCBs by weight, or to 50 ppm PCBs by weight provided that a label or notice is visibly placed in the area. Upon demonstration by the responsible party that cleanup to 25 ppm or 50 ppm will jeopardize the integrity of the electrical equipment at the substation, the EPA regional office may establish an alternative cleanup method or level and place the responsible party on a reasonably timely schedule for completion of cleanup.

(3) *Requirements for decontaminating spills in other restricted access areas.* Spills which occur in restricted access locations other than outdoor electrical substations, as defined under § 761.123, shall be decontaminated in accordance with paragraph (c)(3)(i) through (v) of this section. Conformance to the cleanup standards in paragraph (c)(3)(i) through (v) of this section shall be verified by postcleanup sampling as specified under § 761.130. At such times as restricted access areas other than outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the nonrestricted access area requirements of paragraph (c)(4) of this section.

(i) High-contact solid surfaces, as defined under § 761.163 shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

(ii) Low-contact, indoor, impervious solid surfaces will be decontaminated to 10 $\mu g/100\ cm^2$.

(iii) At the option of the responsible party, low-contact, indoor, nonimpervious surfaces will be cleaned either to 10 $\mu g/100\ cm^2$ or to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

(iv) Low-contact, outdoor surfaces (both impervious and nonimpervious) shall be cleaned to 100 $\mu g/100\ cm^2$.

(v) Soil contaminated by the spill will be cleaned to 25 ppm PCBs by weight.

(4) *Requirements for decontaminating spills in nonrestricted access areas.* Spills which occur in nonrestricted access locations, as defined under § 761.123, shall be decontaminated in accordance with paragraphs (c)(4)(i) through (v) of this section. Conformance to the cleanup standards at paragraphs (c)(4)(i) through (v) of this section shall be verified by postcleanup sampling as specified under § 761.130.

(i) Furnishings, toys, and other easily replaceable household items shall be disposed of in accordance with the provisions of § 761.60 and replaced by the responsible party.

(ii) Indoor solid surfaces and high-contact outdoor solid surfaces, defined as high contact residential/commercial surfaces under § 761.123, shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

(iii) Indoor vault areas and low-contact, outdoor, impervious solid surfaces shall be decontaminated to 10 $\mu g/100\ cm^2$.

(iv) At the option of the responsible party, low-contact, outdoor, nonimpervious solid surfaces shall be either cleaned to 10 $\mu g/100\ cm^2$ or cleaned to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

(v) Soil contaminated by the spill will be decontaminated to 10 ppm PCBs by weight provided that soil is excavated to a minimum depth of 10 inches. The excavated soil will be replaced with clean soil, i.e., containing less than 1 ppm PCBs, and the spill site will be restored (e.g., replacement of turf).

(5) *Records.* The responsible party shall document the cleanup with records of decontamination. The records must be maintained for a period of 5 years. The records and certification shall consist of the following:

(i) Identification of the source of the spill, e.g., type of equipment.

(ii) Estimated or actual date and time of the spill occurrence.

(iii) The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

(iv) A brief description of the spill location and the nature of the materials contaminated. This information should include whether the spill occurred in an outdoor electrical substation, other restricted access location, or in a nonrestricted access area.

(v) Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces and a brief description of the sampling methodology used to establish the spill boundaries.

(vi) A brief description of the solid surfaces cleaned.

(vii) Approximate depth of soil excavation and the amount of soil removed.

(viii) Postcleanup verification sampling data and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical technique used.

(ix) While not required for compliance with this policy, information on the estimated cost of cleanup (by man-hours, dollars, or both) would be useful if maintained in the records.

§ 761.130 Sampling requirements.

Postcleanup sampling is required to verify the level of cleanup under § 761.125(c) (2) through (4). The responsible party may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples) provided that the requirements of paragraphs (a) and (b) of this section are satisfied.

(a) The sampling area is the greater of (1) an area equal to the area cleaned

plus an additional 1-foot boundary, or (2) an area 20 percent larger than the original area of contamination.

(b) The sampling scheme must ensure 95 percent confidence against false positives.

(c) The number of samples must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.

(d) The sampling scheme must include calculation for expected variability due to analytical error.

(e) EPA recommends the use of a sampling scheme developed by the Midwest Research Institute (MRI) for use in EPA enforcement inspections: "Verification of PCB Spill Cleanup by Sampling and Analysis." Guidance for the use of this sampling scheme is available in the MRI report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup." Both the MRI sampling scheme and the guidance document are available from the TSCA Assistance Office, Environmental Protection Agency, Rm. E-543, 401 M St. SW., Washington, DC 20460 (202-554-1404). The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence while using fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.

(f) EPA may, at its discretion, take samples from any spill site. If EPA's sampling indicates that the remaining concentration level exceeds the required level, EPA will require further cleanup. For this purpose, the numerical level of cleanup required for spills cleaned in accordance with § 761.125(b) is deemed to be the equivalent of numerical cleanup requirements required for cleanups under § 761.125(c)(2) through (4). Using its best engineering judgment, EPA may sample a statistically valid random or grid sampling technique, or both. When using engineering judgment or random "grab" samples, EPA will take into account that there are limits on the power of a grab sample to dispute statistically based sampling of the type required of the responsible party. EPA headquarters will provide guidance to the EPA regions on the degree of certainty associated with various grab sample results.

§ 761.135 Effect of compliance with this policy and enforcement.

(a) Although a spill of material containing 50 ppm or greater PCBs is considered improper PCB disposal, this policy establishes requirements that EPA considers to be adequate cleanup of the spilled PCBs. Cleanup in accordance with this policy means compliance with the procedural as well as the numerical requirements of this policy. Compliance with this policy creates a presumption against both enforcement action for penalties and the need for further cleanup under TSCA. The Agency reserves the right, however, to initiate appropriate action to compel cleanup where, upon review of the records of cleanup or EPA sampling following cleanup, EPA finds that the decontamination levels in the policy have not been achieved. The Agency also reserves the right to seek penalties where the Agency believes that the responsible party has not made a good faith effort to comply with all provisions of this policy, such as prompt notification of EPA of a spill, recordkeeping, etc.

(b) EPA's exercise of enforcement discretion does not preclude enforcement action under other provisions of TSCA or any other Federal statute. This includes, even in cases where the numerical decontamination levels set forth in this policy have been met, civil or criminal action for penalties where EPA believes the spill to have been the result of gross negligence or knowing violation.

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April 2, 1987

Part IV

Environmental Protection Agency

40 CFR Part 110

Water Programs; Discharge of Oil; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 110

[FRL 3119-6]

Water Programs; Discharge of Oil

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency is amending the discharge of oil regulation (40 CFR Part 110), which implements section 311 of the Clean Water Act (CWA). The original regulation established a trigger for notifying the federal government of oil discharges that are harmful to public health or welfare. The regulation defined a harmful quantity as the amount of oil that violates applicable water quality standards or causes a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines. It has come to be known as the "sheen regulation."

Today's regulation incorporates the 1977, 1978, and 1980 amendments to section 311 of the CWA and implements section 18(m)(3) of the Deepwater Port Act (DWPA) of 1974 by designating a harmful quantity for DWPA purposes. In addition, the Agency is responding to two suggestions by industry for modifications to the requirements of 40 CFR Part 110. The intended effect is to upgrade the oil spill notification requirements.

EFFECTIVE DATE: May 4, 1987.

FOR FURTHER INFORMATION CONTACT: Hubert Watters, Response Standards and Criteria Branch, Emergency Response Division (WH-548/B), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 382-2463, or the RCRA/Superfund Hotline, (800) 424-9346 (in Washington, DC, 382-3000).

SUPPLEMENTARY INFORMATION: The proposed rulemaking was published on pages 9776-9783 of the **Federal Register** of March 11, 1985, and invited comments for 60 days ending May 10, 1985. The comment period was subsequently extended to July 1, 1985. Comments were received from over 50 sources, and today's preamble summarizes the comments, suggestions, and actions taken.

The contents of the preamble are listed in the following outline:

I. Introduction

On March 11, 1985, the Environmental Protection Agency (EPA) proposed amendments to the discharge of oil regulation (40 CFR Part 110). The March 11, 1985 preamble discussed in detail the nature and purpose of the proposed amendments.

Today, EPA is promulgating final amendments to the regulation. In preparing the amendments to the regulation, EPA has carefully considered all of the public comments submitted on the proposed amendments and is making some modifications in response to those comments. Major issues raised by commenters are addressed in this preamble. A summary of all comments and EPA's response to each is included in the Responses to Comments Documents, which may be found in the public docket for this rulemaking.

Section II of this preamble summarizes those changes made to the March 11, 1985, proposed rule. Statutory provisions, addressed in Section III of this preamble, include the following:

1. Extension of geographical scope of section 311 of the Clean Water Act (CWA) from the contiguous zone seaward to approximately 200 miles.

2. Modification of the harmful quantity definition from discharges of such quantities of oil that "will be harmful" to the public health or welfare of the United States to such quantities that "may be harmful" to the public health or welfare of the United States.

3. Exemption of oil discharges subject to CWA section 402 National Pollutant Discharge Elimination System (NPDES) from coverage under section 311 provisions.

4. Incorporation of the provisions under the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), Annex I.

5. Definition of harmful quantities of oil for purposes of section 18(m)(3) of the Deepwater Port Act of 1974 (DWPA).

Section IV discusses other sections of 40 CFR Part 110, and Section V addresses two suggested changes requested by the regulated community for which comments were solicited in the preamble to the proposed rule. They are:

1. A request by Chevron to consider a volumetric amount of oil discharge as a trigger for notification to replace the sheen test.

2. A request by Esgard that EPA exempt its vegetable oil product, a corrosion inhibitor in ballast tanks, from the oil discharge notification requirements.

Section VI presents a summary of supporting analyses, and Section VII provides a list of subjects addressed by this rulemaking.

II. Changes From Proposed To Final Rule

This section summarizes the substantive changes that have been made to the proposed rule. Four definitions have been modified slightly and one has been deleted. Modifications have also been made to the sections of the rule concerning applicability, prohibited discharges, demonstration projects, notice, and DWPA discharges. A copy of the final rule indicating all changes from the proposed rule has been placed in the docket for this rulemaking and is available for public inspection. The following summary is organized in the same order as the discharge of oil regulation (40 CFR Part 110) itself.

Section 110.1. The definition of "applicable water quality standards" has been amended to be consistent with the EPA water quality regulation, 40 CFR Part 131. The proposed definition in § 110.1 stated that applicable water quality standards were State standards "adopted by the State and approved by EPA . . . or promulgated by EPA . . ." In contrast, 40 CFR 131.21(c) states that:

A State water quality standard remains in effect, even though disapproved by EPA, until the State revises it or EPA promulgates a rule that supersedes the State water quality standard.

Accordingly, the words "and approved by EPA" have been deleted from the definition of applicable water quality standards in § 110.1 of the final rule.

A reference to section 311 of the CWA has been added to the definition of "discharge" to clarify that a different definition, as provided in § 110.11, applies to the DWPA.

The regulatory explanation of the 1977 amendment language which extended the scope of section 311's coverage beyond 12 miles has been deleted from

40 CFR Part 110 because a number of comments indicated confusion regarding the scope of the specific statutory language and the applicability of discharge reporting requirements within the area covered by the language. Under the pre-1977 statutory language of sections 311 (b)(3) and (b)(5), all prohibited discharges of oil in the territorial seas and contiguous zones must be reported. With the enactment of the 1977 CWA amendments, however, Congress inserted additional language in section 311(b)(3) which provided that prohibited discharges "in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act)" must be reported. Since the jurisdiction of the three statutes referenced in the 1977 amendments extends *within* as well as beyond the contiguous zone,[1] there was some question as to whether discharges within the zone now need only be reported if they are actually "in connection with" one of the three additional statutes. EPA believes that the correct interpretation of section 311(b)(3) is that *all* discharges of oil in the territorial seas and contiguous zone that create a sheen must continue to be reported. Discharges of oil beyond the contiguous zone, however, that create a sheen need only be reported if they are "in connection with activities" under the Outer Continental Shelf Lands Act, the Deepwater Port Act, or may affect natural resources subject to U.S. management authority under the Magnuson Fishery Conservation and Management Act. Today's rulemaking clarifies this issue by simply specifying appropriate reporting requirements in terms of whether the discharge and resulting sheen occurred in the territorial sea, the contiguous zone, or beyond 12 miles.

The definition of "oil" has been expanded to include references to both the CWA and the DWPA definitions of oil. Because oil is defined differently in the DWPA than in the CWA and is used in both contexts in the rule, the Agency believes it is desirable to provide references to both of these definitions of oil in § 110.1.

The reference to the Canal Zone has been deleted from the definition of "United States." The CWA no longer applies to the Canal Zone as a result of the Panama Canal Treaty of 1977 and the Panama Canal Act of 1979 (22 U.S.C. 3601 et seq.).

Section 110.2. A sentence has been added to the end of this section on applicability to indicate that the regulations also define the term "discharge" for purposes of section 18(m)(3) of the DWPA.

Section 110.6 (formerly § 110.7). This section sets forth the provisions of CWA section 311(b)(3), which generally prohibits oil discharges in quantities as may be harmful, except for discharges permitted under MARPOL 73/78. The Agency believes that the MARPOL exemption extends to discharges under the DWPA as well. Section 19(a)(1) of the DWPA provides, in relevant part, that ". . . the treaties of the United States shall apply to a deepwater port . . . and to activities connected, associated, or potentially interfering with the use or operation of any such port . . .". Because MARPOL 73/78 is a "treaty of the United States," EPA interprets section 19(a)(1) as authorizing the application of MARPOL 73/78 provisions to discharges under the DWPA and, therefore, has also provided for an exemption of MARPOL 73/78 permitted discharges from DWPA requirements. This point has been clarified in the final rule, and the section on discharges defined for purposes of the DWPA (§ 110.11 in the final rule) has been modified to except discharges permitted under MARPOL 73/78.

Section 110.9 (formerly § 110.10). In response to a commenter's recommendation to delete the geographic scope language from proposed § 110.10, the language has been replaced with the phrase "under section 311 of the Act." The Agency concurs with commenter's statement that the purpose of § 110.9 is to provide waiver authority to the Administrator, and therefore it is unnecessary to reprint the geographic scope in § 110.9.

Section 110.10 (formerly § 110.11). The Agency has amended § 110.10 to make it consistent with Coast Guard discharge reporting regulations by incorporating the language in 33 CFR 153.203, as amended on May 16, 1986 (51 FR 17962).

Section 110.11 (formerly § 110.6). In the final rule, the section concerning discharges defined for purposes of the DWPA has been moved to the end of the regulation. This section has been modified to except discharges from properly functioning vessel engines (which are not deemed to be harmful for CWA purposes) and discharges permitted by MARPOL 73/78. The proposed rule contained an exception for DWPA discharges subject to section 402 of the CWA, but this exception has been deleted. There is nothing in the language or legislative history of the DWPA to suggest that Congress contemplated such an exception.

III. Statutory Provisions Affecting the Oil Discharge Regulation

This section of the preamble describes the five amendments to the sheen rule that were required by changes to the CWA and by the DWPA. Commenters generally expressed support for these regulatory changes. Major issues raised by commenters concerning each of the changes are discussed below.

A. 1977, 1978, and 1980 Statutory Amendments

1. *Extension of Geographical Scope*

In the 1977 amendments to the CWA (Pub.L. 95–217), Congress expanded the geographical scope of section 311 beyond the contiguous zone, which extends seaward to 12 miles, to include oil discharges in connection with a variety of activities out to approximately 200 miles. Specifically, sections 311 (b) and (c) of the Act were amended to apply not only to discharges of oil into navigable waters and the contiguous zone, but also to such discharges—

in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976)" (33 U.S.C. 1321(b) and (c)).

The Agency has amended the jurisdictional provisions of 40 CFR Part 110 to reflect the expanded scope of section 311 in § 110.5.

One commenter acknowledged that the proposed extension of geographical scope is consistent with the CWA amendments, but had reservations about the extension because of "the sheer size of the area to be included." The commenter asserted that the extension "will exacerbate the U.S. Coast Guard's inability to investigate spills." EPA notes that the major purpose of these amendments to the oil discharge rule is to implement statutorily mandated changes. The ability of the Coast Guard to investigate spills in the extended area

[1] Specifically, the Deepwater Port Act of 1974 regulates ports beyond "the territorial limits of the United States," including associated components and equipment, such as pipelines, located seaward of the high water mark. The Outer Continental Shelf Lands Act governs the Outer Continental Shelf, which lies beyond "navigable waters," and the Magnuson Fishery Conservation and Management Act establishes a fishery conservation zone, which lies beyond "the territorial sea of the United States."

depends, of course, on the number of spills in the area at any one time, enforcement discretion, the existence of competing demands for Coast Guard action at any particular time, and the availability of resources. In their comments submitted on this rule, the Coast Guard has not indicated any concern about their ability to carry out necessary investigations.

2. *Modification of Harmful Quantity*

In 1978, Congress modified the harmful quantity criteria of section 311 from discharge of oil that "will be harmful" to discharges that "may be harmful." More specifically, Congress modified the scope of prohibited discharges under section 311(b)(4) from quantities the "discharge of which, at such time, locations, circumstances, and conditions, will be harmful" to such quantities the "discharge of which may be harmful" (Pub. L. 95–576). Section 311(b)(3) was also amended to reflect this change.

The original oil sheen test was promulgated pursuant to the pre-1978 standard of "will be harmful." The Agency views the revised statutory standard "may be harmful" as being, at a minimum, at least as environmentally stringent and protective as the prior "will be harmful" standard, as discussed in more detail below, EPA has reviewed scientific research on the environmental effect of oil spills. It has assessed State and Federal experience in implementing the present "oil sheen" test, and it has carefully considered the alternatives suggested by commenters. On the basis of this review, the Agency has determined that the "oil sheen" is an appropriate, effective, and practical test for harmful quantities of oil under section 311(b)(4) of the CWA. As discussed later in this preamble, the Agency has made the same determination for discharges under section 18(m)(3) of the DWPA.

A number of commenters recognized that the replacement of "determined to be harmful" for "as may be harmful" in the regulations at 40 CFR Part 110 would be consistent with the CWA amendments. Some of these commenters advocated, however, adoption of a quantitative definition of harmful quantity of oil discharge using a volumetric trigger as an alternative to the sheen test. The scientific support for the oil sheen test together with the merits of adopting a volumetric trigger are addressed in detail in the discussion in Section V.A. concerning Chevron's proposal for a volumetric substitute to the sheen test.

3. *Exemption of Discharges Subject to Section 402 of the CWA*

In the 1978 amendments to the CWA, Congress also modified the definition of "discharge" in section 311(a)(2) to exclude from section 311 coverage three types of discharges that are subject to the National Pollutant Discharge Elimination System (NPDES) regulations under section 402 and the enforcement provisions of section 309. Specifically, Congress provided that the following discharges be excluded from section 311 coverage:

> . . . (A) discharges in compliance with a permit under section 402 of this Act, (B) discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to a permit issued or modified under section 402 of this Act, and subject to a condition in such permit, and (C) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of this Act, which are caused by events occurring within the scope of relevant opportunity or treatment systems.

Congress intended this amendment to clarify which section of the CWA governs discharges of oil and hazardous substances from point sources holding NPDES permits. Foreseeable or chronic point source discharges that are permitted under section 402, and that are either due to causes associated with the manufacturing or other commercial activities in which the discharger is engaged or due to the operation of the treatment facilities required by the NPDES permit, are to be regulated under the NPDES program. "Classic spill" situations are subject to the requirements of section 311. Such spills are governed by section 311 even where the discharger holds a valid and effective NPDES permit under section 402.

Several commenters suggested a need for EPA to clarify the three categories of excluded discharges. EPA provided an extensive explanation of these exclusions in the March 11, 1985, preamble to the proposed rule, and the Agency intends at the pesent time to continue this interpretation of the CWA provisions, which was based on the language in 40 CFR 117.12 promulgated in 1979 for reportable quantities of CWA hazardous substances. This interpretation, however, is currently being reevaluated by the Agency in the context of the present NPDES program and the interpretation of "federally permitted releases" under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The Agency intends to address this issue more fully in a forthcoming rulemaking on CERCLA federally permitted releases.

4. *Exemption of Discharges Permitted Under MARPOL 73/78*

Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), entered into force on October 2, 1983 (see 48 FR 45704–45727, October 6, 1983). The purpose of MARPOL 73/78, which supersedes the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, is to eliminate marine pollution from ships. In 1980, the Act to Prevent Pollution from Ships implemented portions of MARPOL, 73/78. Specifically, section 13(b) of Pub. L. 96–478 amended section 311(b)(3)(A) of the CWA to exempt certain discharges into waters seaward of the territorial sea permitted under MARPOL 73/78. Such discharges include the operational discharge of limited quantities of oil-water mixtures from ships. Thus, discharges into those waters from ships made in compliance with the requirements of Regulation 9 of MARPOL 73/78, Annex I (as implemented through 33 CFR Parts 151 and 157), are not subject to notification and liability provisions under the CWA even if they would otherwise be of "a quantity that may be harmful" under the CWA. The MARPOL exemption does not apply, however, to discharges into the internal waters and the territorial seas of the United States. Such discharges must satisfy the CWA harmful quantity discharge standard even if the MARPOL 73/78 discharge standards are met. Section 110.6 of the sheen rule now includes this exemption.

One commenter pointed out that a far greater amount of the oil discharged into the world's oceans comes from tankers rather than from U.S. Outer Continental Shelf production operations and therefore recommended that if an exemption is granted to ships covered under MARPOL 73/78, a volumetric trigger should be set for offshore platforms that operate in the same waters and discharge less oil. In response to this comment, the Agency points out that the principal purpose of this regulatory revision is to incorporate Congress' specific exemption for MARPOL permitted releases. The Agency also notes, however, that the standard under MARPOL is concentration-based rather than volumetric and that Regulation 9 of MARPOL 73/78 applies to all "ships" operating in the marine environment. Such "ships" include all vessels and both fixed and floating platforms. Thus,

the MARPOL 73/78 exemption includes certain operational discharges from offshore platforms as well as from vessels (see Regulation 21 of MARPOL 73/78). Furthermore, some offshore platforms operate under NPDES permits with oil discharge limits, and discharges in compliance with such permits are also excluded from discharge of oil regulation coverage. The Agency has decided to retain the existing reporting trigger for discharges from offshore platforms at this time.

B. Deepwater Port Act of 1974

The Deepwater Port Act (DWPA) of 1974 (33 U.S.C. 150–1524) applies to the construction and operation of deepwater ports in waters beyond the territorial limits of the United States, including associated components and equipment, such as pipelines, located seaward of the high water mark. It contains provisions that prohibit the discharge of oil into the marine environment from a deepwater port, from a vessel that has received oil from another vessel at such a port, and from vessels within a port's safety zone. The DWPA also establishes deepwater port licensee and vessel owner or operator liability for cleanup costs and damages that result from a discharge of oil. Other features of the DWPA include discharge notification requirements, penalty provisions, and the establishment of the Deepwater Port Liability Fund. The fund is liable, without regard to fault, for all cleanup costs and damages in excess of those actually compensated by a liable deepwater port licensee or vessel owner or operator.

Action under each of the key pollution provisions of the DWPA is triggered by a discharge of oil in harmful quantities. Section 18(m)(3) of the DWPA defines "discharge" in terms of those "quantities of oil determined to be harmful pursuant to regulations issued by the Administrator of the Environmental Protection Agency" (33 U.S.C. 1517(m)(3)). In the proposed rule, EPA used the sheen test to complete the definition.

Several commenters favored, in one form or another, a volumetric trigger for discharges under the DWPA. After carefully reviewing the comments submitted and considering them in light of the statutory language of section 18(m)(3) of the DWPA and its supporting legislative history, EPA has decided to use the sheen test in the final rule to define "harmful quantities" for purposes of the DWPA. The Coast Guard, which has the responsibility for implementing the requirements of the DWPA, agrees with this position. Both EPA and the Coast Guard believe that Congress intended that the DWPA definition of harmful quantity be the same as the CWA definition in the oil discharge rule. According to the legislative history of the DWPA, Congress expected the Administrator". . . to define harmful quantities of oil as defined in regulations issued under section 311 of the Federal Water Pollution Control Act" (Sen. Rep. No. 93–1217, 93rd Cong. 2nd Sess. (1974)). As noted by commenters, the section 311 CWA harmful quantity determination was promulgated by the Department of the Interior in 1970 and adopted by EPA in 1971. When Congress enacted the DWPA in 1974 it specifically chose in section 18(m)(3) to define the word "discharge" in terms of "regulations issued by the Administrator of the Environmental Protection Agency". As the legislative history noted above makes explicitly clear, the regulations Congress was referring to were those issued under section 311 of the CWA. Those regulations defined harmful quantities in 1974 in precisely the same terms as today's rulemaking. Therefore, EPA and the Coast Guard believe the rule adopted today at 40 CFR 110.11 fulfills Congressional direction in this regard. Moreover, as discussed below, the Agency believes that the sheen test is an appropriate definition of harmful quantities for purposes of the DWPA.

One commenter submitted data from the Louisiana Offshore Oil Port (LOOP) monitoring program to show that there were no measurable short-term or long-term harmful effects that could be attributed to oil spills from the LOOP.[2] A review of the data submitted, however, suggests that the monitoring program was not specifically designed to assess the impacts of spills that have actually occurred at the LOOP. Moreover, the inconclusive indications that these data provide are more than offset in EPA's view by other scientific studies and research in the record that clearly demonstrate a connection between oil spills and adverse environmental effects, both at offshore oil platforms and other open ocean areas, as well as in controlled laboratory conditions. For this reason also, EPA believes that the determination in today's rulemaking that the oil sheen is an appropriate harmful quantity standard is reasonable and fully supportable.

Another commenter argued that the sheen test does not correspond with either actual or potential harm from deepwater port-related releases, which by definition, occur outside territorial waters. According to the commenter, the regulations assume that the same quantity of oil which presents a potential threat to the public health or welfare of the United States when spilled in navigable waters or in the contiguous zone creates a comparable potential for harm when discharged at a remote offshore location. The commenter challenges this assumption, citing a 1974 study by the U.S. Army Corps of Engineers on different areas of marine environmental sensitivity. It should be noted that this study does not state that there is no harm from oil spills offshore, but rather, that there is likely to be less harm from oil spills offshore than from those inshore. Other researchers have related the potential for harm from an oil spill to distance from shore, by noting that the potential for harm increases as water depths decrease from thousands to hundreds of feet. EPA believes that such a potential for harm exists at the LOOP because contrary to the commenter's suggestion that the LOOP represents a "remote offshore location," the depth of the water surrounding the LOOP platform is in fact on the order of one hundred feet. Furthermore, as mentioned previously, the DWPA definition of deepwater port includes pipelines and other components and equipment located seaward of the high water mark. Thus, LOOP discharges may occur within as well as beyond territorial waters.

Another commenter has indicated concern that unlike section 311 of the CWA, the provisions of the DWPA, specifically 33 U.S.C. 1517(c)(1), statutorily mandate a response action in every instance of a reported discharge, regardless of extreme weather conditions and resulting safety hazards that cleanup actions may entail. The Coast Guard, however, declines to adopt this interpretation of the DWPA. As explained in their comment letter of may 9, 1985 (OS–9–43 in the public docket), the Coast Guard interprets the provisions of the DWPA to give the Coast Guard discretionary authority to determine whether or not a response is necessary when a discharge occurs.

IV. Other Sections of the Oil Discharge Regulation

A few commenters recommended changes to other sections of the oil discharge regulation, particularly to §§ 110.1 and 110.8 of the proposed rule. For reasons discussed in the Responses to Comments documents, the Agency has decided not to incorporate these changes into the final rule.

[2] The LOOP is the only operating deepwater port in the United States. It is located approximately 18 miles off the coast of Louisiana in the Gulf of Mexico.

V. Requests For Changes in the Oil Discharge Regulation

A. Volumetric Alternatives to Sheen Test

Chevron U.S.A., Inc., of San Francisco, California, has commented to EPA that the sheen test under section 311 of the CWA is too stringent and that alternative, volumetric limits would provide sufficient water quality protection at a lesser cost to the company. Chevron has suggested that the reportable quantity threshold be changed to 1 barrel (42 gallons), except where water quality standards are more stringent. The company maintains that spills of less than 1 barrel "rarely, if ever, cause environmental damage." Chevron claims, in material submitted to EPA, that approximately 75 percent of the spills it reports are of under 1 barrel and estimates that the cost to the company is $500 to $6,000 per spill report. Some commenters have urged that a volumetric test be adopted for harmful quantity determinations under the DWPA, as well.

A large number of commenters expressed support for the sheen test rather than a volumetric test. Several commenters cited the greater enforceability, administrative ease, and higher level of environmental protection afforded by the sheen test. A few commenters pointed to the success of the sheen test in promoting prompt reporting and preventing larger spills, as well as in encouraging spill prevention and cleanup by industry. The commenters also noted the problems inherent in a volumetric reporting trigger, including the potential for environmental harm from small quantities of oil in the aquatic environment; these commenters asserted that a volumetric trigger would fail to account for differing susceptibility of water to damage from oil. They noted that the receiving waters and type of oil spilled affect the environmental impact more than the quantity of oil spilled.

Commenters opposed to the sheen test raised questions about environmental harm and concerns about the stringency of the requirement. Several commenters favoring a volumetric alternative to the sheen test also addressed administrative and policy issues as outlined below and detailed in the Responses to Comments documents.

1. Environmental Harm Issues

The majority of commenters opposing the sheen test expressed the belief that small oil spills do not have a significant impact on marine ecosystems. A few of the commenters referred to the fact that many scientific studies have been conducted since the Department of the Interior's 1970 determination that a sheen represents a "harmful quantity" of oil. For example, one suggested that many scientific studies have proven small quantities of oil to be harmless, and another asserted that EPA has failed to consider new data in its decision to retain the sheen test. Of all the commenters who expressed these opinions, only three submitted extensive documentation of scientific studies and literature reviews, which they felt illustrated the substantial amount of recent research that could support a volumetric reporting trigger. One of the commenters also recommended that EPA review the 1985 National Academy of Sciences study on the subject of oil pollution.

EPA has carefully reviewed the recent scientific literature on environmental effects of oil pollution, including documents submitted by commenters and other documents referenced in comment letters or compiled in the public docket during the comment period. EPA believes that the literature clearly demonstrates that discharges of small quantities of oil cause environmental harm. A discussion paper outlining the Agency's position and citing specific documents in support of that position has been placed in the public docket.

Many types of adverse effects from oil have been extensively documented, proving harmful effects from oil spills and chronic pollution in inland waters, in coastal environments, and in waters beyond 12 miles from shore. Evidence from reviews of laboratory studies further demonstrates that very small amounts of oil, e.g., less than 1 mg/L (1 ppm), can have lethal and sublethal effects on a wide variety of organisms. The National Academy of Sciences (NAS), in its 1985 comprehensive review, noted that "low concentrations (less than 1 mg/L) of petroleum hydrocarbons can apparently interfere with the normal behavior of marine organisms, especially the more fragile components such as the larval and juvenile forms of the marine food chain." The review articles and reports prepared by industry representatives that argue strongly for the commenters' position are either limited in their citation of scientific literature or highly selective in the conclusions drawn. The limited evidence cited by commenters to show little or no harm from oil discharges generally applies only to certain areas of chronic pollution (e.g., Milford Haven, United Kingdom), certain types of harm (e.g., permanent harm on a broad scale), or certain organisms. As discussed in the NAS report and in EPA's discussion paper, the studies of chronically polluted areas in the Gulf of Mexico that were cited by commenters are controversial and have been criticized by some scientists for their methodology and conclusions. Commenters provided no evidence disputing the widely recognized types of physical harm that may result from floating sheens of oil such as asphyxiation of fish and benthic fauna due to coating by oil, harm to waterfowl because of loss of buoyancy or loss of insulating capacity of feathers, and adverse aesthetic effects of fouled shorelines and beaches.

Moreover, some commenters appear to have defined potential harm as permanent biological harm on a broad scale. There simply is no persuasive indication in the statute that Congress intended this narrow interpretation of the harmful quantity standard. In fact, the Congressional policy expressed in CWA section 311(b)(1) "that there should be *no* discharges of oil" (emphasis added) suggests just the opposite.

Equally important, nothing in the legislative history of the CWA or in judicial interpretations of the Act suggests that a demonstration of permanent harm on a broad scale is required. Congress stated in the 1978 CWA Amendments that a prohibited discharge need only be a quantity that *may* be harmful. In cases such as *U.S.* v. *Atlantic Richfield Company*, 429 F.Supp. 830, 837 (E.D. Pa., 1977), the courts have suggested that Congress believed that even transitory pollution of waters was deleterious to the environment.

Many of the studies submitted by commenters support the fact that small oil spills do cause harm in certain waters (e.g., spawning grounds, estuaries). Many opponents of the sheen test concede that coastal and inland areas and sensitive habitats may be vulnerable to damage from low levels of oil pollution, and many admit that there may be at least temporary harm. Documents compiled in the public docket clearly show that small amounts of oil are harmful in a variety of locations and circumstances, including spawning grounds and sensitive habitats beyond 12 miles from shore. EPA has therefore chosen to retain the sheen test as an environmentally protective reporting trigger for purposes of both the CWA and the DWPA.

Several commenters favored the establishment of different oil discharge reporting triggers for different waters to ensure that the more stringent sheen test would be used for environmentally sensitive areas, while a less stringent

volumetric test would be applied to less environmentally sensitive waters. To the extent that they favor retaining the sheen test for certain waters, EPA agrees with these commenters. EPA further believes that the sheen test must be applied to all waters to ensure certain, consistent and effective implementation of the harmful quantity standard. A single reporting trigger is entirely consistent with Congressional intent as reflected in the 1978 CWA amendments, which eliminated the requirement that a determination of harm must consider the specific "times, locations, circumstances, and conditions" of a given spill. Senator Muskie, in the debates on these amendments, stated that the determinations of harmful quantities under CWA section 311 "are nationally applicable, before-the-fact decisions and are not expected to reflect the myriad of actual circumstances that may occur" (*Congressional Record* at 519653, December 15, 1977). In the case of hazardous substances, which, like oil, are covered by CWA section 311, EPA has previously expressed the view that Congress intended a single reportable quantity to apply to all waters. As stated in the 1978 preamble to regulations establishing reportable quantities for hazardous substances, "Congress was aware that requiring tailoring of such determinations to water body type and other circumstances is administratively unwise and could prevent achievement of the goals of the [Clean Water] Act" (43 FR 10491, March 13, 1978). EPA believes that this same principle should apply to discharges of oil. EPA continues to believe that a single reporting trigger is a practical and environmentally sound requirement. It is true that discharges of the same amount of oil into different bodies of water may result in different degrees of harm. The boundaries and differentiation of various ecologically significant waters, however, are not clearly defined nor readily discernible. Waters seaward of the territorial seas or the contiguous zone, which may contain neustonic communities or productive fisheries, can be sensitive to small spills. As sensitivity of individual aquatic environments to oil is dependent on much more than just distance from shore, EPA believes that it would be impractical to establish varying oil discharge reporting requirements for different waters. The sheen test, identifying a single threshold for all waters, provides a clear and definitive trigger for the reporting requirements of 40 CFR Part 110. A single reporting trigger for all waters is thus practical, effective, and fully reflective of Congressional intent underlying both section 311 of the CWA and section 18(m)(3) of the DWPA.

Several commenters argued that the sheen test will result in over reporting of discharges that may not be harmful. This argument, however, is true of any reporting trigger including the volumetric test. Moreover, any reporting trigger may in addition to requiring the reporting of some discharges that are not harmful, also allow some harmful discharges to go unreported. In comparison to the sheen test, for example, the volumetric triggers advocated by some commenters would allow nonreporting of a large number of spills that may be harmful both on an individual and cumulative basis. EPA believes that a sheen is an appropriate indicator of a discharge of harmful quantities of oil. A sheen is typically associated with discharges containing concentrations of oil in the 10 to 20 ppm range. In this regard, it is worth noting that Regulation 1(16) of MARPOL 73/78 defines clean ballast as either ballast that does not exceed 15 ppm, or ballast that, if discharged into clean, calm water on a clear day, would not produce a visible sheen. Thus, for purposes of this definition, a discharge causing a sheen may be roughly equated to a discharge with a concentration of 15 ppm. As detailed in the Agency's discussion paper in the public docket, adverse biological effects from oil occur at concentrations many times lower than 10–20 ppm. Furthermore, as noted above, the physical properties of floating sheens themselves may cause harm, such as coating birds' feathers and fouling beaches.

2. Administrative and Policy Issues

Some commenters suggested that a volumetric trigger would reduce the number of spill reports. With a reduction in reports, commenters asserted that there will be less of a paperwork burden on both industry and the implementing agencies and less need for administrative follow-up procedures such as inspections. EPA recognizes that in some cases reporting is already required under separate regulatory systems created under the Outer Continental Shelf Lands Act (OCSLA), under MARPOL 73/78, and under section 402 of the CWA. For facilities regulated under the OCSLU, *all* spills or leakage of oil or waste materials must be reported to the Director of the Minerals Management Service under 30 CFR 250.43 and OCS Order Number 7. The additional cost of complying with the reporting requirements under section 311 of the CWA would be minimal for these facilities.

In light of comments from implementing agencies, EPA believes that the cost of reporting under 40 CFR Part 110 are not excessive. For example, a State agency (Ohio EPA) estimated that the actual reporting phone call to the National Response Center's toll-free number normally takes less than 15 minutes. Furthermore, Ohio EPA has found that its data storage and administrative costs have generally been less than $20 per reported spill. The Coast Guard pointed out that the costs of reporting small spills are very small in comparison to spill prevention and corrective action expenditures. In response to EPA's request for information on administrative costs of responding to small spills, the Coast Guard suggested that spill response costs vary with the level of response required. The cost per assessment will not be reduced, according to the Coast Guard, by a change to a volumetric standard because each report would still need to be assessed to determine the actual amount discharged. Furthermore, the volumetric test may not reduce the overall costs of the regulation nor simplify its administration because there are additional implementation considerations associated with a volumetric test that are not associated with current notification requirements. The costs of installing, maintaining, and repairing any required oil monitoring devices could be substantial. Field verification costs of the releaser as well as the State, Coast Guard, or EPA would likely increase for a given spill, if observers were required to determine the quantity spilled rather than simply the existence of a sheen.

Several commenters expressed the belief that the adoption of a volumetric standard would not entail a reduction in their cleanup operations. The commenters asserted that their commitment to cleanup of all spills should continue under the volumetric standard. EPA commends the commenters' desire for the continued cleanup of all spills. EPA believes, however, that the Coast Guard's efforts to ensure cleanup will suffer in cases of spills that do not meet the volumetric threshold and are therefore unreported. Moreover, if, as commenters assert, voluntary cleanup of all spills will take place, EPA does not believe that the requirement of toll-free telephone reporting places an undue additional burden on vessels and facilities handling oil.

A few other commenters expressed the opinion that a volumetric reporting

trigger would be superior to the sheen test because the appearance of a sheen often depends on weather conditions and water turbulence. However, as discussed below, accurate volumetric determinations also can be dependent on weather and water conditions. The Agency believes that any potential shortcoming of the sheen test in particular circumstances are far outweighed by its overall usefulness, simplicity, and enforceability. A sheen provides a clear indication of a reportable discharge, enabling a responsible party to identify easily which discharges must be reported and facilitating third party (e.g., citizen) complaints or reports.

EPA also believes that the difficulty involved in determining the quantity of oil discharged, as evidenced in data from regulatory agencies, is one factor that makes a volumetric reporting trigger less effective than the sheen test. In many cases, the reports of oil spills are extremely inaccurate. In addition, a volumetric trigger may provide an incentive for underestimating the quantity discharged. In cases when an estimate of slick area and thickness must be made, an observer may require special training. Even under optimal viewing conditions, with a reference scale available for comparing dimensions, only rough estimates of volume may be possible. Moreover, in less than optimal viewing conditions (e.g., poor weather, turbulance, darkness), it is not clear that even rough estimates would be possible. Finally, any time-consuming determination of the amount spilled would be contrary to the spill reporting program goal of immediate notification and quick response to possible environmental threats.

Many commenters suggested that a volumetric reporting trigger would be consistent with the present reportable quantity (RQ) criteria for hazardous substances. EPA notes that an important purpose of the RQ program is to provide a readily implementable and easy to understand reporting trigger for a diverse set of hazardous substances. EPA believes that the sheen test satisfies this same regulatory objective for oil. The sheen test has been shown to be a successful notification trigger for oil under a variety of circumstances. The sheen test takes advantage of the physical properties of oil, which cause a film, sheen, or discoloration upon the surface of the water. Because oil generally floats, the sheen test may be used to provide a more simple, easily enforced, and reliable alternative to a volumetric trigger.

B. Special Use Applications of Oil

EPA has authority under the CWA, section 311(b)(3)(B), and Executive Order 11735 (38 FR 21243) to permit the discharge of oil "in quantities and at times and locations or under such circumstances or conditions" as the Agency determines not to be harmful. Thus, EPA may grant exemptions to section 311(b) and the sheen regulation under appropriate circumstances. The Agency has received a request for an exemption for vegetable oil products used to prevent salt water corrosion in the ballast tanks and void spaces of ships and semisubmersible oil rigs. Several comments were received on this issue. There was disagreement among the commenters as to whether vegetable oil products cause harm.

EPA has decided not to exempt the reporting of vegetable oil product discharges under the oil discharge rule. The Agency has reviewed the materials cited by commenters on the impacts of vegetable oils and believes that these materials do not support the conclusion that these oils do not cause environmental harm. Some harmful environmental effects of vegetable oils are similar to those of petroleum oils and include drowning of waterfowl, fishkills due to increased biological oxygen demand, asphyxiation of benthic life, and adverse aesthetic effects. Finally, the Agency believes that the reporting requirement does not pose such a burden that it would deter the application of a useful vegetable oil product.

VI. Summary of Supporting Analyses

A. Classification and Regulatory Impact Analysis

Regulations must be classified as major or nonmajor to satisfy the rulemaking protocol established by Executive Order 12291. E.O. 22291 established the following criteria for a regulation to qualify as a major rule:

1. An annual effect on the economy of $100 million or more;
2. A major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or
3. Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The amended regulation is a nonmajor rule because the Agency has concluded that it meets none of the above criteria. An analysis has estimated that the upper bound total of annual economic costs from notification requirements, spill investigations, and increased cleanup liability is $3.8 million, well below the $100 million standard for a major rule classification. Data supporting this conclusion are in the rulemaking docket.

This regulation was submitted to OMB for review under Executive Order 12291.

B. Regulatory Flexibility Act

In accordance with the Regulatory Flexibility Act of 1980, Agencies must evaluate the effects of a regulation on "small entities." That Act recognizes three types of such entities:

1. Small businesses (specified by Small Business Administration regulations);
2. Small organizations (independently owned, nondominant in their field, nonprofit); and
3. Small governmental jurisdictions (serving communities with fewer than 5,000 people).

If the rule is likely to have a "significant impact on a substantial number of small entities," the Act requires that a Regulatory Flexibility Analysis be performed. EPA certifies that the amended regulation will not have a significant impact on a substantial number of small entities. There may be some incremental costs of compliance owing the extension of jurisdiction beyond the contiguous zone to approximately 200 miles. These costs will, however, be borne by companies larger than those defined as small entities.

The regulated industry is dominated by a few dozen major corporations. Because regulatory costs will ultimately be borne by these major corporations, the expected compliance costs will not affect any identifiable group of small entities and thus a Regulatory Flexibility Analysis is not required.

C. Paperwork Reduction Act

Information collection requirements contained in this rule have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* and have been assigned OMB control number 2050–0046.

List of Subjects in 40 CFR Part 110

Administrative practice and procedure, Coastal zone, Continental shelf, Environmental protection, Fisheries, Hazardous substances, Intergovernmental relations, Liabilities, Marine resouces, Natural resources, Oil pollution, Penalties, Petroleum, Public health, Reporting and recordkeeping requirements, Rivers, Treaties, Vessels,

Water pollution control, Water resources, Waterways.

Dated: March 24, 1987.

Lee M. Thomas,

Administrator.

For reasons set out in the preamble, 40 CFR Part 110 is revised to read as follows:

PART 110—DISCHARGE OF OIL

Sec.

Authority: Secs. 311 (b)(3) and (b)(4) and 501(a), Federal Water Pollution Control Act, as amended (33 U.S.C. 1321 (b)(3) and (b)(4) and 1361(a)); sec. 18(m)(3) of the Deepwater Port Act of 1974 (33 U.S.C. 1517(m)(3)); E.O. 11735, 38 FR 21243, 3 CFR Parts 1971–1975 Comp., p. 793.

§ 110.1 Definitions.

As used in this part, the following terms shall have the meaning indicated below:

"Act" means the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq., also known as the Clean Water Act;

"Administrator" means the Administrator of the Environmental Protection Agency (EPA);

"Applicable water quality standards" means State water quality standards adopted by the State pursuant to section 303 of the Act or promulgated by EPA pursuant to that section;

"Contiguous zone" means the entire zone established or to be established by the United States under article 24 of the Convention on the Territorial Sea and the Contiguous Zone;

"Deepwater port" means an offshore facility as defined in section (3)(10) of the Deepwater Port Act of 1974 (33 U.S.C. 1502(10));

"Discharge," when used in relation to section 311 of the Act, includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping, but excludes (A) discharges in compliance with a permit under section 402 of the Act, (B) discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to a permit issued or modified under section 402 of the Act, and subject to a condition in such permit, and (C) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the Act, that are caused by events occurring within the scope of relevant operating or treatment systems;

"MARPOL 73/78" means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, Annex I, which regulates pollution from oil and which entered into force on October 2, 1983;

"Navigable waters" means the waters of the United States, including the territorial seas. The term includes:

(a) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

(b) Interstate waters, including interstate wetlands;

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) That are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;

(3) That are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as navigable waters under this section;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this section, including adjacent wetlands; and

(f) Wetlands adjacent to waters identified in paragraphs (a) through (e) of this section: Provided, That waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States;

"NPDES" means National Pollutant Discharge Elimination System;

"Offshore facility" means any facility of any kind located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel;

"Oil", when used in relation to section 311 of the Act, means oil of any kind or in any form, including, but not limted to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. "Oil," when used in relation to section 18(m)(3) of the Deepwater Port Act of 1974, has the meaning provided in section 3(14) of the Deepwater Port Act of 1974;

"Onshore facility" means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land within the United States, other than submerged land;

"Person" includes an individual, firm, corporation, association, and a partnership;

"Public vessel" means a vessel owned or bareboat chartered and operated by the United States, or by a State or political subdivision thereof, or by a foreign nation, except when such vessel is engaged in commerce;

"Sheen" means an iridescent appearance on the surface of water;

"Sludge" means an aggregate of oil or oil and other matter of any kind in any form other than dredged spoil having a combined specific gravity equivalent to or greater than water;

"United States" means the States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands;

"Vessel" means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel; and

"Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

§ 110.2 Applicability

The regulations of this part apply to the discharge of oil prohibited by section 311(b)(3) of the Act. This includes certain discharges into or upon the navigable waters of the United States or adjoining shorelines or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources

under the Magnuson Fishery Conservation and Management Act). The regulations of this part also define the term "discharge" for purposes of section 18(m)(3) of the Deepwater Port Act of 1974, as provided under § 110.11 of this part.

§ 110.3 Discharge into navigable waters of such quantities as may be harmful.

For purposes of section 311(b) of the Act, discharges of oil into or upon the navigable waters of the United States or adjoining shorelines in such quantities that it has been determined may be harmful to the public health or welfare of the United States, except as provided in § 110.7 of this part, include discharges of oil that:

(a) Violate applicable water quality standards, or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

§ 110.4 Discharge into contiguous zone of such quantities as may be harmful.

For purposes of section 311(b) of the Act, discharges of oil into or upon the waters of the contiguous zone in such quantities that it has been determined may be harmful to the public health or welfare of the United States, except as provided in § 110.7, include discharges of oil that:

(a) Violate applicable water quality standards, or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

§ 110.5 Discharge beyond contiguous zone of such quantities as may be harmful.

For purposes of section 311(b) of the Act, discharges of oil into or upon waters seaward of the contiguous zone in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) in such quantities that it has been determined may be harmful to the public health or welfare of the United States, except as provided in § 110.7, include discharges of oil that:

(a) Violate applicable water quality standards, or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

§ 110.6 Discharge prohibited.

As provided in section 311(b)(3) of the Act, no person shall discharge or cause or permit to be discharged into or upon the navigable waters of the United States or adjoining shorelines or into or upon the waters of the contiguous zone or into or upon waters seaward of the contiguous zone in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) any oil in such quantities as may be harmful as determined in §§ 110.3, 110.4, and 110.5, except as the same may be permitted in the contiguous zone and seaward under MARPOL 73/78, Annex I, as provided in 33 CFR 151.09.

§ 110.7 Exception for vessel engines.

For purposes of section 311(b) of the Act, discharges of oil from a properly functioning vessel engine are not deemed to be harmful, but discharges of such oil accumulated in a vessel's bilges shall not be so exempt.

§ 110.8 Dispersants.

Addition of dispersants or emulsifiers to oil to be discharged that would circumvent the provisions of this part is prohibited.

§ 110.9 Demonstration projects.

Notwithstanding any other provisions of this part, the Administrator may permit the discharge of oil, under section 311 of the Act, in connection with research, demonstration projects, or studies relating to the prevention, control, or abatement of oil pollution.

§ 110.10 Notice.

Any person in charge of a vessel or of an onshore or offshore facility shall, as soon as he or she has knowledge of any discharge of oil from such vessel or facility in violation of § 110.6, immediately notify the National Response Center (NRC) (800–424–8802; in the Washington, DC metropolitan area, 426–2675). If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated On-Scene Coordinator (OSC) for the geographic area where the discharge occurs. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or the predesignated OCS immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible. The reports shall be made in accordance with such procedures as the Secretary of Transportation may prescribe. The procedures for such notice are set forth in U.S. Coast Guard regulations, 33 CFR Part 153, Subpart B and in the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, Subpart E. (Approved by the Office of Management and Budget under the control number 2050–0046)

§ 110.11 Discharge at deepwater ports.

(a) Except as provided in paragraph (b) below, for purposes of section 18(m)(3) of the Deepwater Port Act of 1974, the term "discharge" shall include but not be limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping into the marine environment of quantities of oil that:

(1) Violate applicable water quality standards, or

(2) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

(b) For purposes of section 18(m)(3) of the Deepwater Port Act of 1974, the term "discharge" excludes:

(1) Discharges of oil from a properly functioning vessel engine, (including an engine on a public vessel), but not discharges of such oil accumulated in a vessel's bilges (unless in compliance with MARPOL 73/78, Annex I); and

(2) Discharges of oil permitted under MARPOL 73/78, Annex I.

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