ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 258

[F-2001-RDMP-0044; FRL-7637-9]

RIN 2050-AE92

Research, Development, and Demonstration Permits for Municipal Solid Waste Landfills

AGENCY: Environmental Protection Agency.

ACTION: Final Rule

SUMMARY: The Environmental Protection Agency (EPA) is revising the Criteria for Municipal Solid Waste Landfills (MSWLF) to allow states to issue research, development, and demonstration (RD&D) permits for new and existing MSWLF units and lateral expansions. Today's rule will allow Directors of approved state programs to provide a variance from certain MSWLF criteria, provided that MSWLF owners/operators demonstrate that compliance with the RD&D permit will not increase risk to human health and the environment over compliance with a standard MSWLF permit. EPA is finalizing this alternative permit authority to promote innovative technologies associated with landfilling of municipal solid waste. RD&D permits may provide a variance from existing requirements for run-on control systems, liquids restrictions, and the final cover requirements. No variance from any other requirements of MSWLF criteria, unless already provided for in the existing regulations, are allowed under today's rule.

DATES: This rule is effective on **[Insert 30 days from the date of publication in the Federal Register].**

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at 800-424-9346 or TDD 800-553-7672 (hearing impaired). In the Washington, D.C., metropolitan area, call 703-412-9810 or TDD 703-412-3323 (hearing impaired).

For information on specific aspects of this rule, contact Mr. Paul Cassidy, Municipal and Industrial Solid Waste Division of the Office of Solid Waste (mail code 5306W), U.S. Environmental Protection Agency Headquarters (EPA, HQ), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460; telephone: 703 308-7281; e-mail: CASSIDY.PAUL@EPA.GOV.

SUPPLEMENTARY INFORMATION:

I. General Information

A. *How Can I Get Copies Of This Final Rule and Related Information ?*

1. *Docket*. All the information including this rule and the response to comment document is available from the EPA docket. EPA has established an official public docket for this action under Docket ID No. RCRA-2001-0044 (numbered as F-2002-RDMP-FFFFF in the proposed rule). The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. Although a part of the official docket, the public docket does not include Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. The official public docket is available for public viewing at the EPA Docket Center, (EPA/DC) EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the RCRA Docket is (202) 566-0270. The public may copy a

maximum of 100 pages from any regulatory docket at no charge. Additional copies are $0.15 per page.

2. *Electronic Access.* You may access this Federal Register document electronically through the EPA Internet under the "Federal Register" listings at *http://www.epa.gov/fedrgstr/*. An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at http://www.epa.gov/edocket/ to view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified in Unit I.A. Once in the system, select "search," then key in the appropriate docket identification number.

B. *Affected Entities.*

Entities potentially affected by this action are public or private owners or operators of landfills. Affected categories and entities include the following:

Category	Examples of affected entities
Federal Government	Agencies procuring waste services
State Governments	Regulatory agencies and agencies operating landfills
Industry	Owners or operators of municipal solid waste landfills
Municipalities, including Tribal Governments	Owners or operators of municipal solid waste landfills

This table is a guide for readers that describes which entities are likely to be affected by this action. It lists the types of entities EPA is now aware could potentially be impacted by today's action. It is

possible that other types of entities not listed in the table could also be affected. To determine whether you would be impacted by this action, you should carefully examine the applicability criteria. If you have questions about whether this action applies to a particular facility, please consult Mr. Paul Cassidy, U. S. Environmental Protection Agency, Office of Solid Waste (5306W), 1200 Pennsylvania Ave., SW, Washington, D.C. 20460, 703 308-7281, [CASSIDY.PAUL@EPA.GOV].

Outline

I. National Technology Transfer and Advancement Act of 1995

J. Congressional Review Act

II. Legal Authority for this Rule

The authority for today's rule is sections 1008, 2002(a), 4004, 4005(c), 4010 and 8001(a) of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6907, 6912(a), 6944, 6945(c), 6949a, 6981(a)

III. Background

A. What EPA Proposed

On June 10, 2002, EPA proposed a rule that would allow the Director of an approved State program to issue research, development, and demonstration (RD&D) permits to owners and operators of municipal solid waste landfill (MSWLF) units. RD&D permits would not be available in States without an approved MSWLF permit program, 67 FR 39662. EPA proposed this provision in an effort to stimulate the development of new technologies and alternative operational processes for the disposal of municipal solid waste in MSWLF units. The proposed rule would allow the State director to permit variances to specific provisions of the MSWLF criteria, including the (1) operating criteria, except procedures for excluding hazardous waste and explosive gas control in subpart C; (2) the design criteria in subpart D; and (3) the final cover requirements in the closure and post-closure care criteria in subpart F. In order to issue an RD&D permit, the owner/operator of the MSWLF would have to demonstrate to the State Director's satisfaction that a landfill operating under an RD&D permit would pose no more risk to human health and the environment than it would operating under a permit in accordance with all existing MSWLF criteria.

The proposed rule would not allow State directors to deviate from certain criteria, based on a determination that compliance with the established criteria is necessary to protect human health and the environment. As proposed, the following criteria would not be subject to variance in an RD&D permit: (1) location restrictions in subpart B; (2) ground-water monitoring and corrective action in subpart E; (3) financial assurance in subpart G; (4) explosive gas control in 40 CFR 258.23 of subpart C; and (5) hazardous waste control in 40 CFR 258.20 of subpart C.

Under the proposed rule, the duration of the initial RD&D permits would be limited to three years. However, the permit could be renewed for another three years up to a maximum of three times. Therefore, the proposed rule would allow for a maximum permit period of 12 years.

EPA considered, but did not propose, placing a size or quantity limitation on the RD&D projects to be permitted and requested public comment on whether the final rule should be limited to MSWLF units that do not exceed a certain size and/or quantity of waste placed in the landfill. EPA did not propose any such limitations based on the view that due to the potential variations in types of projects, any landfill size or waste quantity limitations should be determined by the State Director on a site-specific basis.

To ensure that projects operating under an RD&D permit meet the expectations of the research, development or demonstration project, EPA also proposed to require that the permittee test, monitor, and submit information to the State Director as specified in the RD&D permit in order for the State Director to determine the progress of the project, insure proper operation of the landfill, and assure protection of human health and the environment. EPA did not propose specific testing or recordkeeping requirements, nor did it specify monitoring frequency. The Agency believed that each

project should be evaluated individually to determine the appropriate frequency of monitoring, type of testing, and what records should be kept. Therefore, under the proposed rule, the State Director would make this assessment and include specific monitoring, testing, and recordkeeping requirements in each permit.

As a separate requirement, the proposed rule would require the landfill owner/operator to submit an annual report to the State Director summarizing progress on how well the project is attaining its goals. Examples of goals include environmental protection, cost benefits, community benefits, compost recovery, improved ground water protection, more rapid and/or complete decomposition of waste, improved landfill gas recovery, and the geotechnical stability of the landfill. These goals should be clearly stated in the permit in objective, measurable terms where possible.

B. What Comments Were Received on the Proposed Rule

EPA received 12 comments on the proposed rule during the comment period. However, after the close of the comment period, EPA received, and continues to receive, electronic form letters expressing opposition to the proposed rule, which now number over 200 letters. Of the12 comments submitted during the comment period, eight came from states (environmental agencies or waste management departments) and an organization representing state waste management agencies; two were from waste management professionals; one was from a waste management trade organization; and one came from a coalition of environmental organizations. The e-form letters, which are identical, are from private individuals, and though submitted after the close of the comment period, have been

considered by EPA in this rulemaking.[1]

The state agencies and state agency organization, as well as the industry commenters generally expressed support for the proposed rule, although some particular issues were raised with respect to the scope of the rule. The environmental group coalition and individual commenters opposed the proposed rule. For EPA's complete responses to the comments, please see the Response to Comments document in the docket. The major issues and a summary of EPA's responses is set forth below in Section V.

IV. Provisions of the Final Rule

A. Summary of the Final Rule

Today's rule grants authority to directors of approved state programs to issue RD&D permits to provide variances from certain criteria in 40 CFR part 258 for new and existing MSWLF units and lateral expansions. However, as a result of comments on the proposal, and in an effort to clarify the Agency's intent, the final rule is narrower in scope than the proposed rule. One comment in particular questioned the broad scope of the proposed rule and the basis for EPA's authority to allow the degree

[1]In expressing opposition to the proposed rule, these commenters argued that the proposal "would effectively deregulate most national standards for municipal landfills under the false guise of encouraging innovation." Rather, the commenters noted that the existing rules are "perfectly adequate to handle applications for variances for testing bona fide innovations." As discussed throughout the preamble, the Agency has narrowed the final rule to allow variances only for run-on control systems, liquids restrictions, and the final cover requirements. That is, no variance from any other requirements of the MSWLF criteria are allowed, unless already provided for in the existing regulations. However, we disagree with the commenters that the existing regulations are adequate to handle applications for variances for testing of innovative solutions regarding run-on control systems, the addition of liquids in landfills, and the final cover requirements. We specifically discuss our basis for these later in the preamble.

of deviation from the criteria in part 258 that the commenter understood the proposal to allow. This comment was based on an interpretation of the proposal that EPA did not intend, indicating that the language of the proposal was potentially ambiguous. Therefore, in an effort to remove any potential ambiguity, the final rule focuses only on the particular areas of new variance authority. The final rule therefore differs from the proposal in approach, but not substantially in effect.

Specifically, the proposal identified a number of provisions in the part 258 criteria for which the Director of an approved State could allow for a variance in an RD&D permit. As explained in more detail below, many of these existing criteria already have their own variance provisions, whereby the Director of an approved State program is already authorized to include alternative means of meeting the criteria in an operating permit for a MSWLF unit. Thus, the inclusion of these provisions in the proposed RD&D rule created confusion and potential ambiguity, because it was not clear whether EPA intended simply to repeat the already-available flexibility or whether some additional variance authority was contemplated.

Moreover, based on the commenters' broad interpretation of the proposed RD&D rule, the commenter also more generally questioned EPA's authority to provide the degree of variance from the criteria as the proposed rule appeared to have allowed. EPA does not agree that, as a statutory matter, it could not have finalized the rule as proposed. However, in light of this comment and specific issues raised in connection with this point, (see section V.A. of the preamble for a detailed discussion), EPA also reconsidered whether it is prudent to allow each of the criteria included for variance authority in the proposal to be available for RD&D permit authority. As a result, EPA decided that several other criteria, which do not contain their own specific variance authority, should also not be included in the

final rule, such as the air criteria and surface water requirements.

Therefore, today's rule provides approved States with the authority to issue RD&D permits to provide variances from the operating criteria in subpart C only with respect to run-on control systems in §258.26(a)(1) and the liquids restrictions in §258.28(a). In addition, the final rule allows an additional variance for the final cover set forth in the closure/post closure criteria in subpart F. Unlike the proposal, EPA is not including authority for further variance from the design criteria in subpart D.

Although the final rule allows variances for only three of the criteria in part 258, there is in fact little difference in the degree of flexibility that approved states can exercise in issuing permits for MSWLF units. In particular, several of the criteria that were proposed for RD&D permits may already be met through alternative means under the existing criteria. Therefore, EPA determined that RD&D permit authority is not needed to allow variances from those criteria. Indeed, unlike RD&D authority, there is no federal limitation on permit duration or renewals, as is contained into today's rule. Also, the existing authority in part 258 for alternatives to meeting the criteria remain available for RD&D projects. The purpose of today's rule is to expand the variance authority for innovative or new technologies or methods beyond the authority that already exists in the MSWLF criteria. This modification of the proposal also responds to a comment asserting that the RD&D permit proposal would unlawfully delegate standard-setting authority to approved states. By narrowing the RD&D permit to specific criteria which do not already include variance authority, EPA further clarifies that it did not intend that the variance, or "waiver," authority as proposed would allow that the requirements themselves could have been waived altogether. The particular criteria that can be subject to RD&D permit variance are discussed in more specificity below.

The final rule is different in another respect from the proposal regarding the scope of coverage. In general, the final rule provides that RD&D permits may be approved for new and existing MSWLF units and lateral expansions. However, in response to a comment, the final rule states that small landfills which operate under § 258.1(f)(1) cannot receive a variance from the liquids restrictions, including the recirculation of leachate, and the addition of any run-on water on to the active portion of the landfill. The reason that the Agency is not applying the final rule to these landfills is that § 258.1(f)(1) is itself a variance from both the design requirements (Subpart D) and groundwater monitoring and corrective action requirements (Subpart E) for small landfills. EPA has concluded that a variance to add liquids to such small landfills which do not have liners meeting the design requirements in § 258.40 and/or are exempt from groundwater monitoring requirements would "present a reasonable probability of adverse affects on human health or the environment" and therefore would not meet the statutory standard for "sanitary landfills" under section 4004(a) of RCRA. In addition, because § 258.60(b)(3) already allows for owners/operators of small MSWLF units to receive a variance from final cover requirements with respect to the infiltration layer, today's RD&D authority for an alternative to the infiltration requirements in the final cover criteria do not apply to small MSWLF units.

Also in response to a comment, EPA has changed the language of § 258.4(a) to clarify that RD&D permits may be issued for "existing MSWLF units, new MSWLF units, and lateral expansions," as those terms are defined in section § 258.2. Although this was the intent of the proposed rule, the terminology used in the proposal was not identical to the defined terms in part 258.

In response to comments regarding permit termination prior to expiration, EPA has decided to modify the language as proposed to allow the State Director to order alternative corrective action

procedures to protect human and health and the environment as an option to termination of operations. In addition, the state permitting authority may include the criteria and process for project termination in the permit. Several commenters requested this change to allow the State Director more flexibility for correcting situations where there may be risks due to improper operations or unforseen problems at a site operating under today's rule. This modification is in keeping with Congress' intent that "disposal of solid wastes should continue to be primarily the function of State, regional, and local agencies . . ." RCRA section 1002(1)(4).

The rule finalizes unchanged from the proposal those requirements regarding type of waste received and other requirements necessary to protect human health and the environment, as well as the annual report requirement. Today's rule also finalizes the proposed rule with respect to the permit duration and renewal provisions. The final rule provides that RD&D permits may be approved for a period up to three years and may be renewed, with a maximum of three renewals allowed, for a total potential duration of 12 years. Also, today's action finalizes the proposal with respect to exclusion of criteria for groundwater monitoring in subpart E (§§ 258.50 through 258.59), closure and post closure requirements in subpart F (§§ 258.60 and 258.61) except alternative cover provisions in § 258.60, and financial assurance requirements subpart G (§§ 258.70 through 258.75). As in the proposal, there is no authority for a variance from these provisions in today's rule.

B. Operating Criteria for Which Variance is Allowed

Today's final rule differs from the proposed rule with respect to those operating criteria in subpart C for which a variance through an RD&D permit is allowed. After further review and in response to comments, EPA is narrowing the specific sections of part 258, subpart C for which a

variance in an RD&D permit may be approved. Specifically, the following operating conditions in subpart C are not included in today's final rule: daily cover material requirements described in §258.21, disease vector control as described in §258.22, air criteria described in §258.24, access requirements as described in §258.25, surface water requirements described in §258.27, and recordkeeping requirements described in §258.29. This is in addition to the exclusions in the proposed rule with respect to the procedures for excluding the receipt of hazardous waste and explosive gas controls described in §§258.20 and 258.23 respectively, which are also excluded from today's rule.

One comment in particular indicated that the proposed rule could be broadly interpreted to remove "critical components" of the criteria altogether from a permit. EPA does not agree that the proposed rule would have eliminated the criteria, however in order to address this concern, the final rule is omitting those criteria for which the existing rules already provide an alternate means/variance authority for approved state programs. This clarification also addresses another commenter's request that the final rule explicitly include the existing flexibility in part 258 into RD&D permits. EPA sees no reason to include those provisions in the RD&D permits, since approved states are already allowed to provide variances from these criteria in standard MSWLF permits. Therefore, EPA is not including variance authority for criteria where part 258 already includes authority for an approved State to allow an alternative means to meeting the criteria. However, EPA clarifies that the existing variance authority continues to be available for MSWLF units that may also receive RD&D permits under today's rule.

EPA is excluding two other criteria contained in part 258, subpart C from RD&D permit authority because the existing criteria implement requirements necessary for meeting statutory requirements. In considering the comment mentioned above regarding removal of critical components

of the criteria, EPA decided that inclusion of these criteria, §§ 258.24 (air criteria) and 258.27 (surface water requirements) in today's rule would be confusing and misleading, and therefore they have been excluded from today's final rule. In addition, the run-off control variance for §§ 258.26(a)(2) and (b) were also deleted from the final rule. The purpose of the run-off controls is to prevent contamination of surface waters by the waste. Therefore, the inclusion of a variance of the run-off control variance as part of the run-on control variance in the proposed rule was inadvertent and is not included in today's final rule.

For the criteria included in today's RD&D permit rule, EPA intends that where the existing criterion prescribes the means of accomplishing the purpose of the criterion, an approved state would have authority to allow a different means to be used. For example, EPA proposed allowing a variance from the liquids restrictions in § 258.28 based on the understanding that the underlying purpose of the liquid restrictions – protection of ground water – would continue to be fulfilled. Because the only bulk liquid that is allowed to be added pursuant to § 258.28 is recirculated leachate/gas condensate, and this is only allowed in MWSLF units constructed with a composite liner and leachate collection system prescribed by § 258.40(a)(2), the existing criteria in § 258.28 provide no authority for approved states to allow the addition of bulk liquids other than recirculated leachate to MSWLF units constructed with the prescribed design. Nor is there any authority to allow leachate recirculation (or addition of other bulk liquids) to MSWLF units constructed with an alternative design approved under §258.40(a)(1). The proposed rule was intended to provide this authority for approved states to allow these activities, but only where the MSWLF owner/operator adequately demonstrates that the alternative design under conditions of added liquids provides ground water protection - and in general is as protective of health

and the environment - that is at least as protective as a MSWLF unit designed and operating as currently prescribed. As in the proposal, today's final rule in § 258.4(b) includes the provision that any RD&D permit "must include such terms and conditions at least as protective as the criteria in this part (part 258) to assure protection of human health and the environment." Both the variances for §§ 258.28(a) and 258.26(a)(1) will allow the addition of water to a landfill. In the case of § 258.26(a)(1), the addition consists of rainwater running on to the landfill. However, the operator would still have to prevent rainwater from running off of the landfill. Therefore, the variance only applies to run-on of rainwater to the landfill.

The effect of today's rule, therefore, is to provide specific authority for states with approved programs to issue variances from part 258, subpart C requirements with respect to those operating criteria for which variance authority is appropriate, but not already included in the existing rule. These operating criteria are those for run-on control systems in §258.26(a)(1) and the liquids restrictions in §258.28(a).

To obtain a variance from either or both of these provisions, the owner/operator must demonstrate that there is no increased risk to human health and the environment. As stated in the proposal, the owner/operator would have to demonstrate "groundwater protection, landfill stability, as well as landfill gas collection and control sooner than is currently required under EPA air regulations," 67 FR 39664. Since today's rule was proposed, EPA published on January 16, 2003 in the Federal Register, 68 FR 2227, the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for municipal solid waste landfills. This rule applies to both major and area sources as explained in the notice. The rule has separate requirements for bioreactor landfills as set forth in subpart AAAA of part

63. The NESHAPs rule defines a bioreactor as: "*Bioreactor* means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste." Any landfill that meets the definition of a bioreactor and the size requirements as set forth in part 63, subpart AAAA would have to meet the bioreactor standards at minimum. In addition, a state could have more stringent requirements with respect to defining or operating "bioreactors." For example a state may designate a maximum moisture content level that is lower than the 40% by weight level specified in the definition of "bioreactor" in part 63, subpart AAAA.

In response to comments expressing concern with the liquids addition authority afforded by today's rule, EPA is modifying the variance authority as proposed with respect to these provisions by specifying that a variance may be allowed only for MSWLF units designed and constructed with a leachate collection system that maintains no more than a 30 centimeter depth of leachate on the liner. EPA has determined that the requisite demonstration of no increased risk to human health and the environment cannot be made unless the MSWLF unit to which the RD&D permit applies is constructed with a leachate collection system designed to maintain no more than a 30 centimeter depth of leachate on the liner. The major concern addressed by §§ 258.26 and 258.28(a) is contamination of surface and ground waters. Therefore, EPA is adding this condition to the variance authority because the alternative design standard presently in 40 CFR 258.40(a)(1) does not require a leachate collection system. Because § 258.28(a) does not allow leachate recirculation (or any bulk liquid addition) in

MSWLF units constructed with an alternative liner, a leachate collection system is not a prerequisite to alternative design approval. However, since today's rule allows a variance to allow leachate recirculation and liquids addition to existing MSWLF units constructed with an alternative liner, EPA is including the requirement for a leachate collection system in this variance authority.

Under the rule as proposed, leachate and other liquids could theoretically have been allowed to be added to a MSWLF unit without a leachate collection system. It is unlikely that any RD&D permit allowing leachate recirculation or addition of other bulk liquids could have been issued to a MSWLF unit without a leachate collection system, because demonstrating the requisite level of protection would require that a leachate collection system be part of any design that would qualify for an RD&D permit. In the preamble to the proposed rule, EPA stated, "Today's proposed rule would grant State Directors in approved States the authority to issue permits allowing the addition of these liquids, provided the owner/operator demonstrates that there will be no increased risk to human health and the environment. The MSWLF owner/operator would therefore be required to demonstrate groundwater protection, landfill stability, . . ." 67 FR 39664. Therefore, EPA is clarifying that an adequately designed leachate collection system is a prerequisite to an RD&D permit involving the addition of liquids, including the recirculation of leachate. This issue is also discussed in the final notice of the MSWLF criteria, 56 FR 50978, 51054 -56 (October 9, 1991).

As previously stated, a variance can only be granted where the MSWLF unit owner/operator demonstrates to the State Director that the risk of contamination to ground and surface waters will not be greater than the risk without a variance. Based on groundwater models such as the HELP model as well as the EPA report, "Assessment and Recommendations for Improving the Performance of Waste

Containment Systems," EPA/600/R-02/099, December 2002, EPA expects any alternative design that is demonstrated to qualify for a variance would necessarily include a leachate collection system that performs at least as well as the leachate collection system presently required under § 258.28. Therefore, today's rule requires that any alternative liner permitted under today's rule must have a leachate collection system where leachate recirculation and/or the addition of bulk liquid wastes (including storm water presently controlled by § 258.26(a)(1)), will be allowed. An adequate leachate collection system is one that is designed to maintain no more than a 30 centimeter head (pressure) on the liner. Liquid addition and/or leachate recirculation on an alternative liner without a leachate collection system above the liner and/or excessive head on the liner should be considered an unacceptable risk to groundwater and potentially to surface water. Standards for ground water protection are set forth in §258.40. In addition, risk analysis methods are available for municipal landfills using EPA's MULTIMED and the HELP models. Additional information is available from the technical manual: "Solid Waste Disposal Facility Criteria" and technical resource document: "Assessment and Recommendations for Improving the Performance of Waste Containment Systems." Another useful resource is the ASCE Seminar: "Design of Waste Containment Systems." More information on the later item is available at: http://www.asce.org/conted/seminars/geotechnical.cfm

A major concern with respect to the addition of water to a landfill is the geotechnical stability of the waste. The addition of liquid can change both the strength and behavior of the waste. Therefore, an owner/operator seeking an RD&D permit would be expected to complete a stability analysis demonstrating the physical stability of the landfill prior to the issuance of a permit. The owner/operator

should be ever vigilant about any movement of the waste and should include in the demonstration a description of the methods for determining whether there is any actual or potential movement of the waste or liquid seepage from the landfill. The methods for determining geotechnical stability, as well as the results of monitoring, should be submitted to the permitting authority at least on annual basis as stated in III, A above.

C. Design Criteria

EPA is not finalizing the proposed inclusion of RD&D permit authority to vary from the design criteria in subpart D. EPA received a lengthy comment opposing additional authority to vary from the design criteria in section 258.40 (see section V.B. below). After reviewing the comment and the authority existing in section 258.40, EPA has determined that the existing design criteria already provide adequate authority for the director of an approved state to allow an alternative design. The existing alternative design provision in §258.40(a)(1) establishes the minimum criteria for protection of human health and the environment, specifically Table 1 and paragraph (d) of §258.40. Because an RD&D permit is not authorized if the risk to human health and the environment would be greater than it would be without a variance, EPA believes that the better course is to maintain the minimum alternative design requirements in § 258.40(a)(1). The existing alternative design provision does not prescribe how these minimum performance criteria are to be met, thus the State Director already has the authority to approve alternative materials and structural components as long as they achieve the requisite level of performance.

EPA recognizes that a primary reason for interest in RD&D permit authority to vary from the design criteria is to enable MSWLF units constructed with an alternative liner design to be operated as

a bioreactor. The obstacle in the part 258 criteria to operation of such a MSWLF unit as a bioreactor is not contained in the design criteria, section 258.40, however. Rather, it is the liquids restrictions in § 258.28(a) that prohibit the addition of bulk liquids, including leachate recirculation, in such landfills. EPA has therefore concluded that the authority for a variance from § 258.28(a) in an RD&D permit contained in today's rule is the only additional variance authority needed to allow for this type of innovation and experimentation. Any other experimentation with liner design, materials, structure, or other design aspects is already allowed pursuant to § 258.40(a)(1). Therefore, inclusion of authority to vary from the design criteria in § 258.40 is not needed.

D. Variance from Final Cover Criteria

EPA proposed a variance from the final cover requirements with respect to the infiltration and permeability layer, in 40 CFR 258.60(a)(1), (2) and (b)(1). One example of an alternative cover is a "phytocover." Rather than serving as a complete physical barrier, phytocovers provide a totally different approach to controlling water infiltration to a landfill by using plants to remove moisture from the soil cover of the landfill and to control chemical or nutrient seepage on the surface of the landfill. In some cases, this type of cover may be used to remove moisture from the landfill if the plant uptake of moisture exceeds the input of water from precipitation.

Although § 258.60(b) provides authority for an alternative final cover, EPA has determined that the existing variance authority may not be sufficient to allow for experimentation with different approaches to final cover engineering, such as phytocovers. As EPA indicated in the preamble to the proposed rule, due to varying climates, topography, and waste handling techniques, there may be other means of keeping moisture from accumulating in a closed MSWLF unit than currently allowed (67 FR

39664). Section 258.60(b)(1) allows a variance from the permeability and infiltration layer specifications in § 258.60(a)(1) and (2), and § 258.60(b)(2) allows a variance from the erosion layer specifications in § 258.60(a)(3). However, the existing variance in § 258.60(b)(1) requires an infiltration layer that will achieve an equivalent reduction in infiltration as that achieved by the prescribed specifications for both permeability and infiltration in § 258.60(a)(1) and (2). This may be insufficient for alternative covers which may allow some moisture through the cap, but use some other mechanism to remove moisture from the waste. Therefore, EPA is including variance authority for 40 CFR 258.60(a)(1) and (2) in addition to that which is afforded in § 258.60(b)(1) in today's final rule. To demonstrate that a proposed experimental final cover will be as protective as a final cover meeting the requirements of § 258.60(a)(1) and (2), the owner/operator of the landfill must demonstrate that no moisture will escape from the landfill to the surrounding surface and groundwater.

The performance of the final cover on a MSWLF unit has long been a fundamental element of sound solid waste management. EPA addressed its concerns regarding final cover requirements when first promulgating the MSWLF criteria in 1991. 56 FR 51094-06. A major concern regarding final cover performance is prevention of the "bathtub effect," which is caused by water passing through the cover and filling up the liner Therefore, the criteria for final cover design prescribe a minimum permeability applicable to all MSWLF units, and where the MSWLF unit has a liner, the criteria require the final cover to be at least no more permeable than the bottom liner.

The bathtub effect is still the major concern with respect to final covers. A demonstration for an RD&D permit for a variance from the final cover criteria must demonstrate that there will not be a buildup of excess liquid in the waste and on the landfill liner. A landfill constructed with a leachate

collection system provides the best opportunity for determining the amount of water in the landfill system and if there is a buildup of excess liquid on the liner. In addition, the physical stability of the landfill is a concern for an alternative final cover that can have significant permeability and allows the waste to pick up some water, even though there is little or no significant liquid on the liner. This is especially true for landfills that are not operated as bioreactors. The owner/operator and the State program Director should consider this possibility when developing an alternative cover under today's rule. The Director should be confident water contacting the waste will not compromise the physical stability of the landfill.

Although there is no measurement specified in today's rule, there is a requirement for a sufficient reduction in infiltration so that there will be no leakage of leachate from the landfill. In many cases, infiltration can be measured, in particular if the landfill has a leachate collection system. For landfills without a leachate collection system, or if measurement is otherwise not an option, alternative means of making a determination must be used. This does not necessarily require modeling, although modeling may be an appropriate means of demonstrating equivalence. Where models do not adequately account for the properties of a proposed alternative cover, the demonstration may be based on reasonable scientific facts and principles. In the case of phytocovers, for example, the demonstration could include the evapotranspiration rate of the cover, *i.e*, the extent to which the cover would be capable of preventing water from reaching the waste or landfill liner. Therefore, the permitting authority could consider the infiltration rate of water to and through the waste over time as opposed to the degree of permeability of the cap alone. EPA intends that today's rule will provide adequate authority for the Director of an approved State program to approve the means for showing an

appropriate reduction in the infiltration of water as part of the RD&D permit approval process.

Today's rule does not include a variance for the erosion layer requirements in § 250.60(a)(3) and (b)(2). Because §258.60(b)(2) already provides authority for an alternative cover design that "provides equivalent protection from wind and water erosion as the erosion layer specified in paragraph (a)(3)," there is no need for any additional variance authority with respect to erosion control.

When allowing use of an alternative final cover, the State Director should consider if some type of financial assurance may be needed to replace an alternative cover with another cover as presently specified in §258.60(a) and (b) in the event the alternative cover allowed by today's rule should fail. The State Director could include this financial assurance with respect to a replacement of the final cover as part of the subpart G requirements for the Financial Assurance Criteria.

Some commenters urged EPA to expand the variance authority in the RD&D permit rule to allow variance from post-closure care requirements, as well as from the final cover requirements. EPA does not agree that additional flexibility is needed for the post closure care requirements in 40 CFR 258.61. There are already opportunities in §258.61 for the Director of an approved State program to modify post-closure requirements on a case-by-case basis. Therefore, today's rule only allows a variance for § 258.60(a) and (b), because our review shows that the existing alternative final cover provision in § 258.60(b) is not sufficiently flexible to allow for a foreseeable range of alternative final cover developments.

V. Major Issues Raised in Comments and Responses

A. Legal Basis for the Rule

The coalition of environmental groups claims that EPA does not have authority to allow a State

with an approved program to issue RD&D permits because this constitutes an unlawful delegation of authority to set standards. They interpret the authority to grant variances from certain criteria through the RD&D permit process as the authority to set standards. The commenter bases this interpretation on four factors: (1) no EPA oversight to ensure that only truly innovative technologies are permitted; (2) no definition of "innovative" in the rule; (3) no means of determining whether the technology for which a variance is sought provides at least "equivalent" environmental and human health protection; and (4) the possibility of the RD&D permit lasting up to 12 years. Finally, they argue that the RD&D permit authority violates RCRA and the National Environmental Policy Act.

EPA disagrees with the premise of the comment that the rule effectively delegates authority to set national standards for municipal solid waste landfills to those states with approved programs. Section 4004(a) of RCRA directs EPA to "promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps . . . . At a minimum, such criteria shall provide that a facility may be classified as a sanitary landfill and not an open dump only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility." Today's rule, in § 258.4(b) explicitly requires that any RD& D permit "include such terms and conditions at least as protective as the criteria for municipal solid waste landfills to assure protection of human health and the environment." EPA clarifies that this requirement that RD&D permit terms and conditions be at least as protective as the existing part 258 criteria is a requirement that any variance under today's rule be equivalent to the existing criteria in protecting human health and the environment.

EPA agrees with the commenters, however, that the proposed rule was drafted more broadly

than necessary to provide the flexibility intended. Therefore, to clarify the scope of the rule, EPA has omitted those parts of the part 258 criteria that already allow for different means to achieve the existing standards, and has added specific requirements for making the requisite demonstration that the permitted variance be as protective as the existing requirements in part 258.

As the comment notes, the variances allowed in an RD&D permit will allow more moisture to enter a landfill, through run-on of storm water and addition of other liquids. Under today's rule, any MSWLF unit must be designed to meet the ground water protection criteria in section 258.40, and must be constructed with a leachate collection system meeting the same performance standard contained in the design criteria (§ 258.40(a)(2)). Moreover, all ground water monitoring and corrective action requirements continue to apply. Therefore, EPA has not changed the ultimate regulatory standard, or allowed states to change the ultimate regulatory standard, that applies to MSWLF units. See Section V.H. below for further discussion of "equivalence."

EPA does not agree that federal oversight of RD&D permits is required or authorized by RCRA. Unlike Subtitle C of RCRA, Subtitle D does not provide authority for a federal permitting program. On the contrary, section 4005(c) requires each State to adopt and implement a permit program to ensure that MSWLF units comply with the federal criteria. Oversight of MSWLF operations is within state, not federal, purview. Today's rule is consistent with existing criteria in part 258 which provides directors of approved state programs to allow alternative means of meeting the criteria to be included in a MSWLF permit (e.g., 40 CFR 258.21(b), 258.40(a)(1)).

Nor does EPA believe that it is necessary to define "innovative." As more fully discussed in the Response to Comments Document, today's rule is modeled on 40 CFR 270.65, a research,

development and demonstration permit rule for innovative and experimental hazardous waste treatment authorized by RCRA section 3005(g). Congress did not define "innovative and experimental" in the statute, nor did EPA define those terms in § 270.65. However, in the preamble to that rule, EPA explained that "innovative and experimental" covers a broad range from technologies or processes that have only been tested in a laboratory setting to those that have already had some commercial application. 50 FR 27802, 27828 (July 15, 1985). For purposes of today's rule, EPA also intends "innovative and new" to be read broadly, to cover technologies and operational methods that are not currently permitted under 40 CFR part 258, ranging from "those "on paper" or tested only in the laboratory to those which may have already had some limited application, e.g. through Project XL.

EPA also does not agree that the 12 year maximum duration of operation under an RD&D permit indicates that the intent of the rule is allow circumvention of the criteria or delegation of standard setting authority. See Section V.D. below and the Response to Comments Document.

EPA also notes that, in addition to section 4004(a) of RCRA, today's rule is supported by RCRA section 8001(a). This provision authorizes EPA to encourage state and local public authorities and agencies, as well as private agencies and individuals, to conduct research, investigations, experiments, training, demonstrations, and studies relating to the development and application of new and improved methods for collecting and disposing of solid waste, as well as improvements with respect to landfills. Today's rule enables States with approved MSWLF permit programs to expand their programs to include permits for particular research, demonstrations, and development of new methods to managing solid waste disposal in MSWLF units, including "means for reducing harmful environmental effects of earlier and existing landfills," and "means for rendering landfill safe for purposes

of construction and other uses, and techniques for recovering materials and energy from landfills. RCRA section 8001(a)(10).

Finally, the comment raises the National Environmental Policy Act (NEPA), claiming that today's rule is an "end run" around NEPA because the rule constitutes a repeal of "its current bioreactor prohibition" and requires EPA to consider "less environmentally risky alternatives to bioreactors." Again, EPA does not accept the premise that today's rule is a rule to authorize bioreactor operation on a national level. The final rule does not change the criteria on a national level; rather today's rule allows approved states to have greater flexibility in implementing specified criteria for research, demonstration and development purposes. Alternatives to today's rule would be alternative means of allowing research, development and demonstration of MSWLF operation and final cover. As the commenter has pointed out, there are already alternative means for conducting research: Project XL and CRADAs. Today's rule provides one additional means of demonstrating new techniques and materials. The means adopted in this rule, a limited purpose and limited duration permit, provides for public participation in each permit determination, and requires the Director of the approved state program to make a determination that the RD&D permit will not increase the probability of adverse effects to health or the environment over the existing criteria. See the Response to Comment document for further discussion of rulemaking under RCRA and NEPA requirements.

B. Variance from Design Criteria

One commenter stated that section 258.40(e) already provides authority for an alternative design, while ensuring EPA oversight of alternative design approval by the State. As described above, EPA agrees that additional authority for a variance from the design criteria in § 258.40 is not needed,

and the final rule does not include such authority. However, § 258.40(e) does not provide the basis for this conclusion.

Section 258.40(e) was specifically promulgated to allow alternative liners in states prior to promulgation of rules for approving state solid waste landfill permit programs. In contrast, § 258.40(a)(1) allows the State Director in a state with an approved program to authorize an alternative liner that meets the minimum ground water protection standards referenced in § 258.40(a)(1), but does not give the same authority to states without an approved program. The process set forth in § 258.40(e) allowed MSWLF owners/operators to construct alternative liners during the period when no EPA regulations for state program approval were in place. EPA promulgated state program approval regulations on October 23, 1998, now codified at 40 CFR part 239, implementing RCRA § 4005(c)(1)(B). Section 258.40(e) provided for EPA oversight because without state program approval, states could not approve a design as meeting the federal performance criteria. Once part 239 was promulgated, approved states were able to issue permits for landfills with alternative liners without the use of §258.40(e), and EPA oversight or approval was no longer necessary. Thus MSWLF owners/operators in approved states seeking construction of an alternative liner no longer need the procedures set forth in § 258.40(e).

Since the authority in today's rule only applies in approved states, and approved states already have authority in § 258.40(a)(1) to allow alternative designs, there is no need to include authority for a variance from the design criteria in today's rule. As noted above, EPA does not exercise or claim oversight authority with respect to state approvals of alternative designs under 40 CFR 258.40(a)(1).

C. Methods for Fostering Innovation

One commenter claims that EPA has sufficient processes for fostering innovation without providing additional variance authority through RD&D permits and referenced two other modes for fostering innovation. The first was the Cooperative Research and Development Agreements (CRADAs) and the second is Project XL.

EPA agrees that research by entering into CRADAs can provide useful and high quality information. EPA is currently working with Waste Management, Inc. under a CRADA on a five-year project concerning bioreactor operation at the Outer Loop Facility in Louisville, KY[2]. The major purpose of this CRADA is to receive technical EPA assistance in project development and monitoring techniques for the site. However, CRADA authority does not allow any variance from the existing landfill regulations. These limitations in scope, size, and project cost are reasons for the limited number of CRADAs. Therefore, the existing experiment is limited in the parameters that can be explored under existing criteria. Indeed, the existing CRADA at the Outer Loop facility illustrates why CRADAs do not provide the same opportunities for innovation. Today's rule will not effect the Outer Loop research under the CRADA. However, even without a CRADA for research at the Outer Loop facility, the State of Kentucky will be authorized to issue a state permit in the future to allow Waste Management to expand its research at this facility within the parameters of the RD&D permit authority.

The other avenue for innovation mentioned by the commenter was Project XL. EPA has processed four projects under Project XL involving MSWLFs, all of which involve some use of bioreactor technology or leachate recirculation. Each of these projects required a site-specific rule

[2]The CRADA and the Quality Assurance Project Plan (QAPP) for the site are available on request from the Office of Research and Development.

making at the federal level, as well as permit modifications on the state level. With today's rule, the federal site-specific rulemaking will not be needed to allow such projects to be permitted. However, similar demonstrations of expected performance and results will be needed in the permitting process, and public participation will take place in the permitting process as well. Therefore, while Project XL has proven useful for these and other innovative projects, EPA does not believe that the types of variances allowed under today's rule are such that a federal rulemaking should be required for each such project. EPA believes that the permit process provides the necessary scrutiny and public participation for variances included in RD&D permits. EPA Regional and Headquarters expertise is available to assist states in developing permits for the appropriate facilities.

Both CRADA authority and Project XL remain available for research and innovation. Because today's rule allows for particular variances, innovation with other aspects of MSWLF construction or operation may continue to be available only through a site-specific rulemaking for example, under Project XL. Today's rule provides an additional avenue for particular variances from prescribed means of meeting federal criteria for MSWLF units.

D. Duration of RD&D Permits

Several commenters argue that the proposed duration of up to 12 years, including permit renewals is too long and provides much more time than is necessary for testing innovative materials or practices. On the other hand, others believe that the maximum permit duration is too short, some of whom think there should be no maximum time limit on the permit, arguing that the State Director should make the final determination with respect to permit duration.

EPA does not agree with the view that a 12 year maximum duration is too long. Because there

is a need to renew the permit every three years, EPA does not expect every RD&D permit to extend for the maximum number of years. However, some RD&D projects may be active for longer periods of time. While MSWLF units typically receive waste over relatively short time frames such as 5 to 7 years, the reaction or stabilization process may continue over a longer period of time. It may be reasonable, or even necessary, for an RD&D permit to encompass active operation, closure and post-closure in order for the permittee to assess a cover material, equipment performance, leachate quantity and quality, or other parameters for which a variance under today's rule has been granted in the permit. Extending the permit over a longer period also allows for collection of data that is required under an RD&D permit, but not required under the federal criteria for a standard MSWLF permit.

EPA also does not agree that the 12 year maximum is too short or that there should be no maximum period at all. EPA always intended these permits to be temporary, discrete permits from which data could be used for future rulemaking(s). Therefore, the purpose of RD&D permit authority is to allow innovation and experimentation under close state oversight for a limited period. It is not intended to allow permanent operation of a MSWLF using means outside the scope of the existing criteria.

If an experiment is successful and the state or EPA wishes a project to continue operation under the terms of the RD&D permit beyond the 12-year time frame, an amendment to 40 CFR part 258 would be needed. EPA anticipates that during the period of the final 3 year permit term, either the facility would seek a site-specific rule or EPA would consider a general rulemaking to incorporate the experimental aspects of the project into the part 258 criteria. At that time, the project would be evaluated by EPA, and if EPA agreed, the appropriate regulatory change, either on a site-specific or

general basis, would be proposed. The subsequent EPA evaluation and rulemaking process, which will be similar to the Project XL rulemaking process, is expected to take another one to two years. EPA believes it has struck a balance here between the need to support and encourage innovation and the prescriptiveness of the federal criteria. Therefore, we believe that the total 12 year permitted time frame is reasonable and appropriate.

E. Bioreactor Landfills

One commenter opposes the rule "as a matter of policy" because the means chosen – permit variances – are contrary to the goal of developing data that may be used to revise the existing federal MSWLF criteria, which should involve standardized research protocols. The example cited by the commenter is that EPA stated in the proposal that it expects the rule to foster experimentation with bioreactor technology and operation. The commenter believes that there are too many engineering problems with bioreactor landfills for state permitting authorities to be able to adequately address them in their permits.

EPA does not agree that the data generated from RD&D projects will be unusable because the research will not be carried out using standardized protocols. Today's rule, like many of the requirements in the existing MSWLF criteria, is based on unit-specific and site-specific flexibility for meeting the underlying standards established in the part 258 criteria. The existing MSWLF criteria and today's rule recognize that differences in climate, terrain, and a range of other factors are appropriate factors to address in the terms and conditions of individual permits.

Moreover, the information gathered as a result of RD&D permits is expected to be useful in a similar manner as information gathered from the Project XL bioreactor projects. Such information

includes the quality and quantity of leachate, quality of waste, quality and quantity of gas generation, measurement of subsidence by using standard engineering/scientific approaches or approved EPA methods. When reviewing any data for use in future rulemaking efforts, whether from Project XL, RD&D permits, or other sources, standard Agency QA/QC protocols will be used and all information will be subject to public comment and review.

As noted above, the commenter expressed greatest concern with the application of today's rule to expand construction and/or operation of MSWLF units as "bioreactors," i.e., landfills where controlled addition of non-hazardous liquid wastes or water[3] accelerate the decomposition of waste and landfill gas generation. The deposition of liquid non-hazardous waste should be compatible and suitable with the operation of the landfill, i.e, the waste will not inhibit the biodegradation process or cause operational problems for the landfill, including risks to human health or the environment.. EPA recognizes that RD&D permit authority will likely be used to allow leachate recirculation in existing MSWLF units constructed with alternative liners approved pursuant to § 258.40(a)(1). In fact, EPA believes this is an important area for research and views this as one of the principal benefits of this rule. Under the existing criteria in § 258.28, leachate recirculation is allowed only in MSWLF units constructed with a composite liner and leachate collection system in accordance with the design criteria in § 258.40(a)(2) and (b). Similarly, EPA recognizes that liquid wastes in addition to recirculated leachate may be allowed under an RD&D permit. As EPA noted in the proposal, new technologies for landfill operations and design have emerged since the MSWLF criteria were promulgated in 1991,

[3]In many or most cases, water is used in lieu of any liquid wastes. In most cases, the water is groundwater or river water and may even be tap water.

which can enable safe bioreactor operation (i.e. the four bioreactor landfills allowed by Project XL). EPA agrees with the commenter that there are major engineering challenges presented by substantially increasing the liquid component of the waste. However, as the commenter points out, recent research, lessons learned from failures, and experimentation through Project XL and the Outer Loop CRADA have provided valuable information and models for appropriate design, operation, and monitoring.

Each of the MSWLF leachate recirculation or bioreactor operations studied so far have been required to have leachate collection systems that maintain no more than 30 centimeters (cm) depth of leachate on the liner per section 258.40(a)(2). In light of the commenter's concerns about bioreactor operations in particular, EPA has determined that no variance from the requirement that a leachate collection system maintaining no more than 30 cm depth of leachate on the liner should be allowed. Where leachate is being recirculated and/or bulk liquids are added to the landfill to promote decomposition, EPA has required (in the existing criteria, § 258.28 and § 258.40) and is requiring in today's rule that the system maintain a maximum leachate head of 30 cm in order assure that there is no excessive pressure on the landfill liner in order to prevent leakage of leachate into the groundwater. The 30 cm. head on the liner standard was originally proposed in the Federal Register for the MSWLF criteria on August 30, 1988 and is the same standard as used for leachate collection systems at subtitle C hazardous waste landfills (53 FR 33341 and 33396).

In addition, EPA believes that the owner/operator should be ever vigilant about any movement of the waste and he/she should include the methods of determining whether there is any ~~or~~ potential movement of the waste or liquid seepage from the landfill. The methods ~~of~~ for determining geotechnical stability, as well as the results of monitoring should be submitted to the permitting authority at least on

an annual basis as stated in III, A above.

F. Variances for Groundwater Monitoring

Most commenters on this issue agreed that groundwater monitoring requirements should not be allowed to be varied under today's rule. However, two commenters recommend allowing variances from groundwater monitoring requirements. One commenter stated that the basic need to conduct groundwater monitoring should be maintained, but that it should not be "EPA's intent to forestall RD&D on new techniques for groundwater monitoring."

EPA does not agree that variance from the groundwater monitoring criteria is needed to allow for research, development and demonstration of new techniques for groundwater monitoring. The existing criteria already provide for site-specific factors to be taken into account and provide a number of opportunities for approved states to make alternative determinations (e.g., §§ 258.51(a)(2), (b); 258.54(a)(1), (2)). Moreover, the existing criteria (§§ 258.52, 258.53) allow the owner/operator of a MSWLF unit flexibility in establishing a sufficient and appropriate groundwater monitoring system and a groundwater sampling and analysis program. Neither commenter identified any RD&D type activities that would be hampered by the existing groundwater monitoring criteria. Therefore, no variance from groundwater monitoring requirements is allowed under today's rule.

G. Termination of a Project for Cause

One commenter stated that the proposed language of §258.4 (c) regarding project termination at "all operations at the facility" is excessive and may even be unnecessary. The commenter expects that a State Director's authority to terminate operations at a facility would already be established under State law, and would not depend on this provision. In this provision, EPA should concern itself only

with those operations that are subject to the RD&D permit. If any projects were ever terminated for cause, it is inappropriate for EPA to suggest that it is necessary for the entire facility to cease operations. Instead, EPA should simply state that any RD&D permit issued pursuant to this authority shall contain the criteria and process for project termination.

EPA understands the commenter's concern with this requirement. EPA agrees that the State Director needs reasonable latitude for assuring protection of human health and environment. Therefore, EPA has decided to modify the language of this requirement to allow the State Director to order alternative corrective action procedures to protect human health and the environment as an option to termination of operations allowed under today's rule. In addition, today's rule does not apply to other operations on the site that may be operating under separate permits. The state permitting authority may include the criteria and process for project termination in the permit.

H. Burden of Proof for Variance Determinations for RD&D Permits

One commenter was concerned that the need to demonstrate that RD&D proposals are "at least as protective" as existing requirements is too high a burden for the owner/operator to meet. The commenter was concerned that states may establish prohibitively high standards for demonstrating technologies for those applying for an RD&D permit.

EPA believes at an "equivalent or better" standard is the correct standard. EPA has promulgated objective criteria under the statute, many of which include authority for approved states to allow "alternative" means of meeting the criteria which are "equivalent."

EPA expects today's rule to be implemented in a comparable way to the existing authority for variances in part 258, and therefore does not expect the equivalence determination to be burdensome.

Similarly, this type of determination has been made by states and EPA for the Project XL MSWLF projects for which site-specific rules already have been promulgated by the EPA. The XL projects can serve as examples for states with approved programs evaluating whether a proposal for an RD&D permit will be equivalent to the existing criteria with respect to environmental protection. In addition, in today's rule, EPA has limited the criteria for which variances are allowed as well as provided more specific information on making an equivalency determination. EPA will be available to work with states in resolving any issues in this area.

I. Implementation of Today's Rule

One commenter was concerned that the proposed rule change would not be self-implementing. Therefore, states could only issue RD&D permits only after EPA approval of new state rules. The commenter was concerned that states would take up to five years to adopt today's final rule since some states took this long for the original approval of the MSWLF criteria.

As explained in the proposal, today's rule is not self-implementing, that is, a MSWLF owner/operator will only have the opportunity to apply for an RD&D permit in a state with an approved state program containing RD&D permit provisions. Today's rule allows states with approved programs to adopt RD&D permit provisions, and any state without an approved program would be able to include RD&D permit provisions in a program it submits to EPA for a determination of adequacy under 40 CFR part 239.

EPA does not expect state program modifications that would incorporate RD&D permit provisions to be nearly as extensive as the original process for approval of the state's solid waste permit program. The initial submissions were complicated by the fact that EPA did not have rules for state

permit program adequacy determinations in 1991, when the MSWLF criteria went into effect. Those rules, 40 CFR part 239, were promulgated by EPA in 1998.

EPA is aware that some state permitting authorities are interested in implementing the new rules as soon as possible. EPA is now working with some of these states in order to assure their submissions for approval are complete in order to minimize the time it will take for these state program modifications to be approved. EPA believes that a state submittal and EPA review could take as little as six months for approval. However, EPA acknowledges that the process could take significantly longer, if for example, a State delays making an adequate submission.

J. The Addition of Water to Arid Landfills

One commenter stated that bioreactor-type operations should not be allowed at small landfills for which design requirements, ground water monitoring, and corrective action are not required pursuant to §258.1(f)(1), since adding liquid would violate the model on which the exemption is based.

EPA agrees that, because these landfills either have no liner or an inadequate liner to prevent the migration of any excess water in the landfill, no variance from operating procedures designed to control liquids should be allowed for those MSWLF units. Therefore, a paragraph has been incorporated into the final rule excluding any MSWLF unit that is exempt from subparts D and E of part 258. These MSWLF units will not be eligible for RD&D permits for variances from the run-on criteria in §258.26(a)(1) or the liquids restrictions in §258.28(a) This includes small and remote landfills operating under § 258.1(f)(1) of the criteria.

EPA also notes that small landfills, including those that qualify for the exemptions under §258.1(f), already have the opportunity for alternative final cover requirements with respect to the

infiltration layer requirements in §258.60(b)(1). Under §258.60(b)(3), the Director of any approved State may allow for alternative infiltration layer requirements for small MSWLF units, after public review and comment. Since small MSWLF units already have the flexibility afforded by today's rule with respect to final cover, EPA has determined that today's variance authority with respect to final cover requirements will not apply to small MSWLF units.

K. Potential Increased Emissions of Landfill Gas

One commenter was concerned that larger quantities of landfill gas will be generated from MSWLF units that are operated as bioreactors. The commenter stated that additional gas collection and monitoring requirements should be required by rule.

With the exception of explosive gas control requirements, landfill gas controls are not regulated pursuant to Subtitle D of RCRA: rather landfill gas emissions are regulated under the Clean Air Act (CAA). The air criteria in 40 CFR 258.24 refer to CAA requirements by requiring compliance with the applicable State Implementation Plan provisions under section 110 of the CAA. Specific requirements pertaining to landfill gas emissions from MSWLF units are addressed in 40 CFR Part 60, Subparts Cc and WWW. Recently, EPA promulgated National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills (68 FR 2227, Jan. 16, 2003). This rule includes requirements for initiating landfill gas collection and control in bioreactor landfills. See 40 CFR Part 63, Subpart AAAA. State air permitting authorities should assure that air emissions from MSWLF units operating under a RD&D permit meet Federal Clean Air Act Regulations as specified in the state air permit or FESOP (Federally Enforceable State Operating Permit). Since these provisions apply to all MSWLF units, including those operating under RD&D permits, and consistent with section 1006(b) of

RCRA, EPA sees no need for additional requirements under RCRA to address air emissions in today's rule.

L. Rule Authorizing Future Projects Based on the Success of a Technology.

Several state commenters suggested that successful waste management methods and techniques that prove successful in an RD&D project be allowed to be incorporated into the state's rules without waiting for EPA to amend the federal criteria. A similar comment was made regarding allowing such methods and techniques to be incorporated into the rules of other states based on successful RD&D projects. EPA does not agree that one successful RD&D project should necessarily be the basis for a rule change in the state issuing the permit or other states.

Pursuant to section 4005(c) of RCRA, EPA regulations governing state permit program approval require the state program to have the authority to impose requirements "adequate to ensure compliance with 40 CFR part 258." 40 CFR 239.6(e). Part 258 does not allow variances from §§ 258.26(a)(1), 258.28(a) and 258.60(a)(1), (2) and (b)(1), except in accordance with today's rule, and therefore, EPA would not approve a state program modification incorporating authority to deviate from the requirements of these criteria in standard MSWLF permits. Unless and until EPA promulgates a rule incorporating any such changes into the federal criteria, after seeking comment, states would not be able to allow a new technology or method to be included in a MSWLF permit outside of the RD&D rule parameters.

VI. State and Tribal Implementation of Today's Rule

The municipal solid waste landfill criteria are implemented in one of two ways. The first, and preferred alternative, is that each State implements the criteria after EPA reviews its municipal solid

waste landfill permit program or other system of prior approval and finds it to be adequate pursuant to 40 CFR part 239. The criteria contain provisions that allow States to develop and rely on alternative approaches to address site-specific conditions. Therefore, the actual planning and direct implementation of solid waste programs is principally a function of State governments, rather than the federal government. The criteria can also be "self-implementing" by landfill owners and operators in those States that have not received EPA approval of their MSWLF permitting programs. In this case, the regulations provide less flexibility for owners and operators. As of January 1, 2002, 50 States and territories had received approval of their programs and are implementing the MSWLF criteria.

As discussed in a prior Federal Register notice (63 FR 57027, October 23, 1998), Tribes are not included in the definition of State under RCRA, and therefore EPA does not have authority under RCRA to approve tribal MSWLF permitting programs. However, tribes can seek the same flexibility as afforded owners and operators located in approved States through a site-specific rulemaking as discussed in the EPA draft guidance entitled, "Site Specific Flexibility Requests for Municipal Solid Waste Landfills in Indian Country," EPA530-97-016, August 1997.

Today's final rule to allow RD&D permits is not self implementing. MSWLF owners/operators will only be able to obtain an RD&D permit in approved States that adopt authority to issue such permits. Because today's rule provides more flexibility than existing federal criteria, states are not required to amend permit programs which have been determined to be adequate under 40 CFR part 239. States have the option to amend statutory or regulatory provisions pursuant to today's rule. If a State chooses to amend its statutory or regulatory authority, and if doing so modifies the State's solid waste permit program, the State is required to notify the EPA Regional Administrator of the

modification as provided by 40 CFR 239.12. Whether a State chooses to incorporate today's rule into its solid waste program will have no effect on the status of its existing program with respect to EPA approval, i.e., a State's submission of revisions to issue RD&D permits does not open a previously approved solid waste program for Federal review.

Tribes are also eligible for RD&D permits under today's rule, similar to owners and operators located in approved States, through a site-specific rulemaking outlined in the previously referenced draft guidance document, "Site Specific Flexibility Requests for Municipal Solid Waste Landfills in Indian Country."

VII. How does this rule comply with applicable statutes and executive orders?

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735), the Agency must determine whether this regulatory action is "significant" and therefore subject to formal review by the Office of Management and Budget (OMB) and to the requirements of the Executive Order, which include assessing the costs and benefits anticipated as a result of the proposed regulatory action. The Order defines "significant regulatory action" as one that is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in

the Executive Order. Today's rule allows, but does not require, States to provide RD&D permits to individual MSWLFs. This rule will not require any MSWLF to apply for such a permit, but would provide an opportunity to those owners/operators of MSWLF units seeking to try innovative or new technology or processes with respect to landfilling municipal solid waste.

It has been determined that today's rule is not a significant regulatory action under Executive Order 12866 and is therefore not subject to OMB review.. Today's rule would impose no new requirements and is intended to give more flexibility to the regulated community with significant potential net cost savings. Although net cost savings are expected, EPA is unable to estimate the magnitude of the savings because it is not known how many RD&D permits will be authorized nor what kinds of permit changes or innovations might be undertaken.

B. Paperwork Reduction Act

The information collection requirements in this rule will be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. An Information Collection Request (ICR) document will be prepared by EPA and a copy, when completed, may be obtained from Sandy Farmer by mail at Collection Strategies Division; U.S. Environmental Protection Agency (2822); 1200 Pennsylvania Ave., NW, Washington, DC 20460, by email at farmer.sandy@epamail.epa.gov, or by calling (202) 260-2740. A copy can also be downloaded off the internet at http://www.epa.gov/icr when it is available. The information requirements are not enforceable until OMB approves them.

The ICRs affected by this rule are for 40 CFR part 239, Requirements for State Permit Program Determination of Adequacy and part 258, MSWLF Criteria. OMB has reviewed the ICR

for part 239 (ICR# 1608.03, OMB# 2050-152). EPA included estimates of the cost for approved States to revise their existing program for today's rule. The estimated cost was $5,680 per respondent. EPA will request comments under the ICR review process from States which plan to make these revisions so that EPA can better understand the expected burden that would be incurred by states who wish to make these changes. EPA is estimating that approximately five states will revise their rules to take advantage of today's rule. In addition, EPA will also be requesting information from MSWLF owners/operators on the reporting burden that they would incur due to this rule under the part 258, MSWLF criteria ICR (ICR# 1381.06, OMB# 2050-0122) when that review process begins. This process is scheduled to be completed in October 2003. Information which States are expected to require include a demonstration as part of the permit application, the annual report specified in the rule, as well as additional monitoring and testing requirements which may be specified by a State authority. Additional monitoring requirements could include the measurement of leachate head on the liner; landfill temperature at various locations; type, application rate and application method of various wastes, including liquid wastes and water that maybe placed in the landfill; additional hydraulic studies; landfill settlement rate determinations; etc. At present, EPA estimates that only two to three landfills a year will be permitted under this rule over the next few years. Reporting requirements are estimated to cost between $15,000 and $25,000 per year per landfill. So total reporting costs are estimated at $30,000 to $75,000 per year for the first year and increasing at a rate of $50,000 per year for the next three years thereafter.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory

Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et. seq., generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) a small business that is primarily engaged in the collection and disposal of refuse in a landfill operation as defined by NAICS codes 562212 and 924110 (also defined by SIC codes 4953 and 9511) with annual receipts less than 10 million dollars, as defined in accordance with the Small Business Administration (SBA) size standards established for industries listed in the North American Industry Classification System (see http://www.sba.gov/size/NAICS-cover-page.html); (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities. In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analyses is to identify and address regulatory alternatives "which minimize any significant economic impact of the proposed rule on small entities" (5 U.S.C. Sections 603 and 604). Thus, an agency may certify that a rule will not have a significant economic impact on a

substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on small entities subject to the rule. This rule will create no additional burden for small entities since small entities are not required to apply for a permit under today's rule in order to operate a landfill under part 258, unless they utilize a different technology then is allowed under existing rules. Therefore, getting a permit under today's rule is optional on the part of the landfill owner/operator.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments, and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of alternatives and adopt the least costly, most cost effective or least burdensome alternative that achieves the objective of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments,

enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA's analysis of compliance with the Unfunded Mandates Reform Act of 1995 found that this rule imposes no additional enforceable burden on any State, local or tribal governments or the private sector. Thus, today's rule is not subject to the requirements of sections 202, 203, and 205 of UMRA.

E. Executive Order 13132 : Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This final rule does not have federalism implications. It would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Implementation of this rule by a State is at the State's discretion and is not required. Nevertheless, although section 6 of Executive Order 13132 does not apply to this rule, EPA has consulted with States through the Association of State and Territorial Solid Waste Management Officials during the development of this rule. Thus, Executive Order 13132 does not apply to this rule change.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA requested and received comments on the proposed rule from State and local officials. These comments have been addressed in the preamble and the Response to Comments document.

F. Executive Order 13175 : Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 6, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." "Policies that have tribal implications" are defined in the Executive Order to include regulations that have "substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes."

Under section 5(b) of Executive Order 13175, EPA may not issue a regulation that has tribal implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by tribal governments, or EPA consults with tribal officials early in the process of developing the proposed regulation. Under section 5(c) of Executive Order 13175, EPA may not issue a regulation that has tribal implications and that preempts tribal law, unless the Agency consults with tribal officials early in the process of developing the regulation.

EPA has concluded that this rule will have no new tribal implications. It would not present any additional burden on the tribes, but will allow more flexibility for compliance with the MSWLF criteria.

It will neither impose substantial direct compliance costs on tribal governments, nor preempt tribal law. Thus, the requirements of sections 5(b) and 5(c) of the Executive Order do not apply to this rule.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" applies to any rule that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is not subject to Executive Order 13045 because it is not an economically significant rule as defined by Executive Order 12866, and because it would not affect decisions involving the environmental health or safety risks to children.

H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution or Use

This rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This rule reduces regulatory burden. It thus should not adversely affect energy supply, distribution or use.

I. National Technology Transfer and Advancement Act of 1995

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide explanations to Congress, through OMB, when the Agency decides not to use available and applicable voluntary consensus standards.

This rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective **[Insert 30 days from the date of publication in the Federal Register].**

List of Subjects in 40 CFR Part 258

Environmental protection, Reporting and recordkeeping requirements, Municipal Landfills, Waste treatment and disposal.

Dated: March 15, 2004.

Michael O. Leavitt,
Administrator.

For the reasons set forth in the preamble, EPA is amending 40 CFR part 258 as follows:

PART 258 - CRITERIA FOR MUNICIPAL SOLID WASTE LANDFILLS

1. The authority citation for part 258 is revised to read as follows:

Authority: 33 U.S.C.1345(d) and (e); 42 U.S.C. 6902(a), 6907, 6912(a), 6944, 6945(c) and 6949a(c), 6981(a).

Subpart A - [Amended]

2. Amend subpart A to add §258.4 as follows:

§ 258.4 Research, development, and demonstration permits.

(a) Except as provided in paragraph (f) of this section, the Director of an approved State may issue a research, development, and demonstration permit for a new MSWLF unit, existing MSWLF unit, or lateral expansion, for which the owner or operator proposes to utilize innovative and new methods which vary from either or both of the following criteria provided that the MSWLF unit has a leachate collection system designed and constructed to maintain less than a 30-cm depth of leachate on the liner:

(1) The run-on control systems in § 258.26(a)(1); and

(2) The liquids restrictions in § 258.28(a). .

(b) The Director of an approved State may issue a research, development, and demonstration permit for a new MSWLF unit, existing MSWLF unit, or lateral expansion, for which the owner or operator proposes to utilize innovative and new methods which vary from the final cover criteria of § 258.60(a)(1), (a)(2) and (b)(1), provided the MSWLF unit owner/operator demonstrates that the infiltration of liquid through the alternative cover system will not cause contamination of groundwater or surface water, or cause leachate depth on the liner to exceed 30-cm.

(c) Any permit issued under this section must include such terms and conditions at least as protective as the criteria for municipal solid waste landfills to assure protection of human health and the environment. Such permits shall:

(1) Provide for the construction and operation of such facilities as necessary, for not longer than three years, unless renewed as provided in paragraph (e) of this section;

(2) Provide that the MSWLF unit must receive only those types and quantities of municipal solid waste and non-hazardous wastes which the State Director deems appropriate for the purposes of determining the efficacy and performance capabilities of the technology or process;

(3) Include such requirements as necessary to protect human health and the environment, including such requirements as necessary for testing and providing information to the State Director with respect to the operation of the facility;

(4) Require the owner or operator of a MSWLF unit permitted under this section to submit an annual report to the State Director showing whether and to what extent the site is progressing in attaining project goals. The report will also include a summary of all monitoring and testing results, as

well as any other operating information specified by the State Director in the permit; and

(5) Require compliance with all criteria in this part, except as permitted under this section.

(d) The Director of an approved State may order an immediate termination of all operations at the facility allowed under this section or other corrective measures at any time the State Director determines that the overall goals of the project are not being attained, including protection of human health or the environment.

(e) Any permit issued under this section shall not exceed three years and each renewal of a permit may not exceed three years.

(1) The total term for a permit for a project including renewals may not exceed twelve years; and

(2) During permit renewal, the applicant shall provide a detailed assessment of the project showing the status with respect to achieving project goals, a list of problems and status with respect to problem resolutions, and other any other requirements that the Director determines necessary for permit renewal.

(f) Small MSWLF units.

(1) An owner or operator of a MSWLF unit operating under an exemption set forth in § 258.1(f)(1) is not eligible for any variance from §§ 258.26(a)(1) and 258.28(a) of the operating criteria in subpart C of this part.

(2) An owner or operator of a MSWLF unit that disposes of 20 tons of municipal solid waste per day or less, based on an annual average, is not eligible for a variance from §258.60 (b)(1), except in accordance with §258.60(b)(3).