

The terms "canard," "canard configuration," "tandem wing configuration," and "winglet," as used in this notice mean:

**Canard**—the forward wing of a canard configuration which may be a fixed or variable geometry surface, with or without control surfaces.

**Canard configuration**—an airplane configuration in which the span of the forward wing is substantially less than that of the aft wing.

**Tandem wing configuration**—an airplane configuration having two wings of similar span, mounted in tandem.

**Winglet**—an out-of-plane surface extending from a lifting surface. This surface may or may not have control surfaces.

#### Economic Impact

A regulatory evaluation and regulatory flexibility determination has been conducted, and copies are available in the docket. A copy may be obtained by contacting the person identified above under "For Further Information Contact." The proposal involves benefits and costs. The benefits are not readily quantifiable, since they are increased safety, and materialize only in the form of fewer injuries and deaths. Neither are the costs readily quantifiable. The cost of compliance with the proposal would result primarily from designing and certifying new Part 23 airplane empennages, including any testing that may be required. Some manufacturing parts costs as well as operating costs may also be involved.

A probability analysis has been used to estimate the potential benefits of the proposed regulations. This approach combines informed judgments about both the nature of fatigue hazards and the expected effectiveness of the proposed counter measures with statistical techniques that systematically treat the uncertainties inherent in such judgments. The analysis generates a range of benefit values and probability distribution of achieving these benefits, which can then be compared with the estimated costs of the proposal. The benefit estimates were calculated for a hypothetical period, 1984.

Accident reports for a ten year period, 1972-82, were examined in order to determine the number of fatalities, injuries, and property damage attributable to empennage failures due to fatigue.

Fourteen empennage fatigue-related accidents resulted in 21 fatalities, 2 serious and 4 minor injuries. In addition, 10 of the airplanes involved in these accidents were completely destroyed and the remaining 4 were severely damaged.

The basic conclusion of this evaluation is that benefits expected to result from the proposed rule will exceed the estimated costs of implementing the rule. For the hypothetical 1984 fleet analysis, the annual costs are estimated to be \$201,297. Expected annual benefits are estimated conservatively to be \$537,000, resulting in an average benefit-to-cost ratio of 2.7.

Costs and benefits broken down by airplane types also compare favorably. For single-engined airplanes, estimated average annual benefits per airplane of \$152.70 compared with estimated average annual costs per airplane ranging from \$8.37 (with load specifications provided) to \$9.36 (without load specifications provided) resulting in benefit-to-cost ratios of 18.2 and 16.3, respectively. For twin-engined airplanes, average annual benefits per airplane are estimated at \$231.20 compared with estimated average costs per airplane ranging from \$180.02 (with load specifications provided) to \$182.57 (without load specifications provided) resulting in benefit-to-cost ratios of 1.3 in both cases.

The FAA invites comments on the economic impact of the proposals. Commenters are requested to address any benefits or costs that may be associated with the proposals.

#### Conclusion

The FAA has determined that this document involves a proposed regulation that is not major under the provisions of Executive Order 12291, and is not significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress in order to ensure, among other things, that small entities are not disproportionately affected by government regulations. The RFA requires agencies to review rules which may have a "significant economic impact on a substantial number of small entities." The FAA defines a small aircraft manufacturer as one with less than 75 employees. It defines a substantial number as one that is not less than 11 and that is more than one-third of the small entities subject to the proposed rules. A significant economic impact is defined as \$14,258 per year in added costs to each of these small manufacturers. A review of the aircraft manufacturers indicates that less than 11 "small" manufacturers would be subject to the proposed regulations. Therefore, the FAA certifies that this proposal will not have a significant economic impact on a substantial

number of small entities under the criteria of the Regulatory Flexibility Act.

This proposal, if adopted, would have little or no impact on trade opportunities for both U.S. firms doing business overseas and foreign firms doing business in the U.S. All new type certificated U.S. manufactured aircraft would have to meet the standards. The cost of compliance is minimal, ranging from perhaps a maximum of four percent of the cost of a new airplane to less than one percent of the cost. This added cost also creates a discernible benefit, making the aircraft which meets the standards a more attractive product, in both U.S. and foreign markets.

#### List of Subjects in 14 CFR Part 23

Aircraft, Aviation safety, Safety, Air transportation, Tires.

#### The Proposed Amendment

#### PART 23—[AMENDED]

Accordingly, the FAA proposes to amend Part 23 of the Federal Aviation Regulations (14 CFR Part 23) as follows:

1. The authority citation for Part 23 continues to read as follows:

Authority: 49 U.S.C. 1344, 1354(a), 1355, 1421, 1423, 1425, 1428, 1429, 1430; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

2. Section 23.572 is amended by revising the title; by revising paragraph (a) introductory text; and by adding a new paragraph (b) to read as follows:

#### § 23.572 Wing, empennage, and associated structures.

(a) The strength, detail design, and fabrication of those parts of the wings (including canards, tandem wings, and winglets), empennage, their carry-through, and attaching structure whose failure would be catastrophic must be evaluated under either of the following unless it is shown that the structure, operating stress level, materials, and expected use are comparable, from a fatigue standpoint, to a similar design that has had extensive satisfactory service experience.

(1) \* \* \*

(2) \* \* \*

(b) Each evaluation required by this section must include typical loading spectra (e.g., taxi, ground-air-ground cycles, maneuver, gust), effects of propeller slipstream impingement and the effects of lifting surface wakes.

Issued in Kansas City, Missouri, on September 11, 1986.

**Jerold M. Chavkin,**

*Acting Director, Central Region.*

[FR Doc. 86-21326 Filed 9-19-86; 8:45 am]

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# Registered Federal Register

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Monday  
September 22, 1986

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## Part III

### Department of Transportation

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Federal Aviation Administration

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#### 14 CFR Part 29

Airworthiness Standards; Rotorcraft  
Structural Fatigue and Damage  
Tolerance; Notice of Proposed  
Rulemaking and Announcement of Public  
Meeting

## DEPARTMENT OF TRANSPORTATION

## 14 CFR Part 29

[Docket No. 23485; Notice No. 86-13]

## Airworthiness Standards; Rotorcraft Structural Fatigue and Damage Tolerance

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM), invitation for interested persons to submit comments, and announcement of public meeting.

**SUMMARY:** This notice proposes to add damage tolerance requirements to the fatigue evaluation of rotorcraft structure. Damage tolerance is the capability of rotorcraft structure to continue functioning without catastrophic failure after being subjected to fatigue damage, corrosion, or accidental damage expected during fabrication and operation of the rotorcraft. Also included in the notice are proposals to extend fatigue evaluations from flight structure to all critical structures, including landing gear, and to explicitly require consideration of operations having a high number of ground-air-ground or power cycles per hour. The intended effect of these proposals is to prevent or reduce catastrophic fatigue failures in transport category helicopters. The severe loading environment in which rotorcraft operate results in damage from fatigue cracks, corrosion, and other sources. More damage tolerant structure is needed to prevent or control the spread of this damage.

**DATES:** A public meeting will be held at 10 a.m. on February 24, 1987.

Comments must identify the docket number and must be received on or before March 27, 1987.

**ADDRESSES:** Comments on the notice may be mailed in duplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attn: Rules Docket (AGC-204), Docket No. 23485; 800 Independence Avenue, SW., Washington, DC 20591, or delivered in duplicate to: Room 916, 800 Independence Avenue, SW., Washington, DC 20591. Comments delivered must be marked: Docket No. 23485.

Comments may be inspected in Room 916, between 8:30 a.m. and 5 p.m., weekdays, except Federal holidays.

The public meeting will be held in the Training Room, Building 3B, FAA, Southwest Region, 4400 Blue Mound Road, Fort Worth, Texas, beginning at 10 a.m. on February 24, 1987.

**FOR FURTHER INFORMATION CONTACT:** Mr. R.T. Weaver, Regulations Program Management (ASW-111), Rotorcraft Standards Staff, Federal Aviation Administration, P.O. Box 1689, Fort Worth, Texas 76101, commercial telephone (817) 624-5122, or FTS 734-5122.

**SUPPLEMENTARY INFORMATION:****Comments Invited**

Interested persons are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, or economic impact that might result from adopting the proposals contained in this notice are invited. Substantive comments should be accompanied by cost estimates. Comments should identify the regulatory docket. Submit comments in duplicate to the Rules Docket address. All comments received on or before the closing date for comments will be considered by the Administrator before taking action of the proposed rule. The proposal contained in this notice may be changed in light of comments received. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 23485." The postcard will be date/time stamped and returned to the commenter.

**Availability of This Notice**

Any person may obtain a copy of this NPRM (Notice No. 86-13) by submitting a request to the FAA, Office of Public Affairs, Attention: Public Information Center, APA-430, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 426-8058.

Communications must identify the notice number of this NPRM. Persons interested in being placed on a mailing list for future rulemaking documents should also request a copy of Advisory Circular No. 11-2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedures.

Copies of proposed Advisory Circular (AC) 29.571-X, Fatigue Evaluation of Transport Category Rotorcraft Structure (including damage tolerance), and AC 20-107, Composite Aircraft Structure, are contained in the docket file. Copies

of these AC's may be obtained by contacting the person identified under the caption "FOR FURTHER INFORMATION CONTACT." A separate request for comments for AC 29.571-X will be published.

**Background**

The proposal to add damage tolerance requirements to the rotorcraft regulations results from an assessment of the potential for preventing crashes and saving lives by the use of redundant structure and other damage tolerant design features and from an assessment of the current rotorcraft design "state of the art." The proposals to add landing gear and increased frequency of ground-air-ground cycles to the fatigue substantiation result from the ongoing Rotorcraft Regulatory Review Program. They are based on two proposals submitted for consideration at the Rotorcraft Regulatory Review Conference, which was held in New Orleans, Louisiana, in December 1979.

On January 8, 1983, the FAA issued an advance notice of proposed rulemaking (ANPRM) and invited all interested persons to submit comments concerning the addition of damage tolerance requirements to the fatigue requirements of the U.S. transport category rotorcraft rules. A public meeting was held on February 8, 1983, to afford interested persons an opportunity to establish dialogue with the FAA and other interested parties in connection with the proposal of the ANPRM to add damage tolerance to the rotorcraft regulations. Over 50 persons attended the conference held on February 8, 1983, in Fort Worth, Texas. A transcript of the discussions of the meeting is in the docket.

As a result of the comments and data presented during the comment period for the ANPRM and during the public meeting, the FAA determined that the proposed addition of damage tolerance requirements to transport category rotorcraft rules is sufficiently warranted to issue an NPRM and associated AC.

**Regulatory Structure**

Both Parts 27 and 29 of the FAR deal with type certification of civil rotorcraft. Part 27 currently deals with rotorcraft under 6,000 pounds, and Part 29 deals with rotorcraft over 6,000 pounds. The addition of damage tolerance requirements to the type certification of civil rotorcraft is proposed by this NPRM only to Part 29. The state of the art makes damage tolerant design more practical for larger, more complex rotorcraft than for rotorcraft under 6,000 pounds.

### The Proposal

This proposal presents damage tolerance requirements for the transport category rotorcraft rules as contained in § 29.571.

### Economic Summary

A preliminary economic evaluation has been prepared for this proposal to add damage tolerance requirements to the fatigue evaluation of rotor structures. The primary objective of the proposed amendment to § 29.571, "Fatigue Evaluation of Flight Structure," is to prevent or reduce catastrophic fatigue failures in transport category rotorcraft.

The estimates of economic impacts for the proposed amendment to § 29.571 are based on the best information currently available to the FAA. The estimates of the cost of compliance with the proposed additional requirements of § 29.571 rely to a considerable extent on a report prepared for the FAA by Logical Technical Services Corporation entitled "Estimates of the Cost Difference Resulting from the Introduction of Damage Tolerance to Rotorcraft Structural Fatigue Requirements" (herein referred to as the LTS study). A report on the LTS study is available in the docket of this rulemaking. Information for analysis of benefits was obtained from the safety records of the NTSB and the FAA. The conclusions regarding economic consequences, however, reflect the judgment of FAA personnel. The estimates of impacts may be revised after the close of the public comment

period if better information becomes available.

The changes in regulations governing rotorcraft certification affect only newly certificated equipment. Hence, the proposal to amend § 29.571 would only have an economic impact on transport category rotorcraft type certificated after the effective date of this amendment.

The proposal also has provisions to extend fatigue evaluation from flight structure to all critical structures, including landing gear, and to explicitly require consideration of operations having a high number of ground-air-ground or power cycles per hour. These provisions incorporate into the FAR current industry practices and will not impose additional costs.

The potential benefit resulting from the addition of damage tolerance requirements to the fatigue evaluation of rotorcraft structures has two components. The first is the potential savings for the general public in lower exposure to accidents and death attributed to fatigue failure. The second is the cost savings resulting from the changes in life cycle costs stemming from the introduction of damage tolerance criteria. The evaluation indicates that the use of damage tolerance criteria will increase acquisition costs but will have the potential for decreasing the requirements for replacement components through extended service life.

The FAA has not determined the extent to which damage tolerant components will also incorporate

extended lifetime. To allow for the uncertainty inherent in predicting future damage tolerant component service life, the potential increase or decrease in life cycle cost resulting from replacing safe-life components with damage tolerant components for a fleet of 600 typical transport category rotorcraft is presented as a range of life cycle ratios. At any service life ratio, the economic benefit of the proposal is the sum of the safety benefit (i.e., the net present value of the preventable loss, consisting of the costs of mortality, morbidity, hull damage, and investigation) and the life cycle cost impact. Table 1 illustrates the relationship between life cycle costs and various accident prevention scenarios for a fleet of typical transport category rotorcraft. As shown in this figure, if the damage tolerant components have the same life as the safe-life components that they replace, and one accident per year is avoided by the use of these components, the present value of the cost resulting from the introduction of damage tolerance criteria will exceed benefits by approximately \$22 million. In the same context, if the damage tolerant components can be made to have a lifetime that is twice the life of safe-life components and four accidents per year are averted, the total net present value of the benefit resulting from the change will be approximately \$22 million. In the extreme, if damage tolerant components can be made with indefinite life and if 10 accidents per year can be avoided by the use of these damage tolerant parts, the present value of the net benefit is estimated to be about \$75 million.

TABLE 1.—THE RELATIONSHIP BETWEEN LIFE CYCLE COST AND SAFETY BENEFIT FOR A FLEET OF 600 TYPICAL TRANSPORT ROTORCRAFT

[1984 Values]

Service life scenario	Present value of life cycle cost	Net present value, life cycle costs savings <sup>1</sup>	Annual No. of accidents avoided	Net present value of expected value of preventable loss	Net present value benefits or (costs)
Same as safe life	\$154,261,000	(\$24,625,000)	1	\$2,935,408	(\$21,689,592)
	154,261,000	(24,625,000)	4	11,741,630	(12,833,370)
	154,261,000	(24,625,000)	10	29,354,076	4,729,076
Twice safe-life life	119,474,000	10,162,000	1	2,935,408	13,097,408
	119,474,000	10,162,000	4	11,741,630	21,903,630
	119,474,000	10,162,000	10	29,354,076	39,516,076
Indefinite life	84,381,000	45,255,000	1	2,935,408	48,190,408
	84,381,000	45,255,000	4	11,741,630	56,996,630
	84,381,000	45,255,000	10	29,354,076	74,609,076

<sup>1</sup> Compared to safe life present value of life cycle cost of \$129,636,000.

The FAA concludes that in most cases the service life of damage tolerant components may well be a factor of two or three times greater than current safe-life components as a result of advances in the use of new high strength-to-weight materials and improved damage tolerance design data. Similarly, the number of accidents that will be avoided annually will exceed the

average of four accidents per year experienced in the period between 1971 and 1982 because of the increasing size of the transport category rotorcraft fleet. On the basis of the above, the FAA concludes that the midrange of benefits associated with the introduction of damage tolerance criteria will exceed costs by approximately \$13 to \$39.5

million over the 10-year period following enactment of this regulation.

### Regulatory Flexibility

The FAA has determined that under the criteria of the Regulatory Flexibility Act (RFA) the proposed rule, at promulgation, will not have a significant economic impact on a substantial number of small entities. The Small

Business Association (SBA) defines a small helicopter manufacturer as one having fewer than 1,500 employees. The regulation directly affects the costs of manufacturers of large civil helicopters only. Currently, only three firms, Boeing-Vertol, Sikorsky, and Bell Helicopter Textron, Inc., manufacture large civil helicopters, and all exceed the employment limits set for small entities. Thus, the proposed amendment to Part 29 does not directly affect any small entities.

This notice proposes regulations which will substantially reduce the number of rotorcraft accidents caused by catastrophic structural fatigue failures. The FAA's preliminary evaluation of the effect of the damage tolerance proposals indicates that the benefits will exceed the costs, primarily because of the reduction of injury and equipment losses due to accidents. The preamble contains a discussion of the benefit/cost relationship. Therefore, the FAA has determined that this notice involves a rulemaking action which is not a "major rule" under Executive Order 12291; but is considered a "significant rule" under Department of Transportation (DOT) Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A full regulatory evaluation will be prepared with the assistance of comments received as a result of this notice. In addition, for the reasons stated above, it is certified that the proposals, if promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. This proposal, if adopted, would have little or no impact on trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the U.S. A copy of the draft evaluation prepared for this action is contained in the regulatory docket. A copy of it may be obtained by contacting the person identified under the caption "FOR FURTHER INFORMATION CONTACT."

#### List of Subjects in 14 CFR Part 29

Air transportation, Aircraft, Aviation safety, Safety, Rotorcraft.

#### The Proposed Amendment

#### PART 29—[AMENDED]

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend Part 29 of the FAR (14 CFR Part 29) as follows:

1. The authority citation for Part 29 continues to read as follows:

Authority: 49 U.S.C. 1344, 1354(a), 1355, 1421, 1423, 1424, 1425, 1428, 1429, 1430; 49

U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

2. By revising § 29.571 to read as follows:

#### § 29.571 Fatigue and damage tolerance evaluation of structure.

(a) *General.* An evaluation of the strength of principal elements, detail design points, and fabrication techniques must show that catastrophic failure due to fatigue, environmental effects, intrinsic/discrete damage, or accidental damage will be avoided. Parts to be evaluated include, but are not limited to, rotors, rotor drive systems between the engines and rotor hubs, controls, fuselage, fixed and movable control surfaces, engine and transmission mounting, landing gear, and their related primary attachments. In addition, the following apply:

(1) Each evaluation required by this section must include—

(i) The identification of principal structural elements and detail design points, the failure of which could result in catastrophic failure of the rotorcraft;

(ii) In-flight measurement in determining the loads or stresses for items in paragraph (a)(1)(i) of this section in all critical conditions throughout the range of limitations in § 29.309 (including altitude effects), except that maneuvering load factors need not exceed the maximum values expected in operations; and

(iii) Loading spectra as severe as those expected in operation based on loads or stresses determined under paragraph (a)(1)(ii) of this section, including external load operations, if applicable, and other high frequency power cycle operations.

(2) Based on the evaluations required by this section, inspections, replacement times, or other procedures must be established as necessary to prevent catastrophic failure. These inspections or other procedures must be included in the airworthiness limitations section of the Instructions for Continued Airworthiness required by § 29.1529 and section A29.4 of Appendix A.

(b) *Fatigue tolerance evaluation (safe life supplemented by damage tolerance).* The structure must be shown by analysis supported by test evidence and, if available, service experience—

(1) To be able to withstand repeated loads of variable magnitude without detectable cracks for the following time intervals—

(i) Life of the rotorcraft; or

(ii) Within a replacement time furnished under section A29.4 of Appendix A to this Part.

(2) To be of damage tolerant design.

(i) The damage tolerance evaluation must include a determination of the probable locations and modes of damage caused by fatigue, environmental effects, or accidental damage.

(ii) The extent of damage for residual strength evaluation at any time within the operational life must be consistent with the initial detectability and subsequent growth under repeated loads.

(iii) The residual strength evaluation must show that the remaining structure is able to withstand design limit loads without failure.

(iv) If significant changes in structural stiffness or geometry, or both, follow from a structural failure or partial failure, the effect on damage tolerance must be further investigated.

(v) Compliance with the damage tolerance requirements of this subparagraph is required unless the applicant establishes that damage tolerant design for a particular structure is impractical.

#### Explanation

Safe-life criteria have been used for years in transport category rotorcraft design. Even after the option of fail-safe design was added to the rules in 1968, safe-life criteria continued to be used for most structural components. In recent years, advances have been made in the state of the art of rotorcraft design which make damage tolerant design more practical. These advances include increased use of composite construction (with favorable crack retardation characteristics), redundant structural design techniques, and other crack retardation techniques. Accordingly, proposed § 29.571(b) adds damage tolerance requirements to the structural substantiation requirements of transport category rotorcraft.

As a result of the 10 comments received in response to the ANPRM, proposed § 29.571 has been extensively revised from the proposal in the ANPRM. All 10 commenters agree with the addition of damage tolerance concepts to rotorcraft design; but one commenter reserves final opinion "until additional information is acquired," and one commenter takes "strong issue with the ANPRM granting preeminent right to the damage tolerance procedures" in the determination of structural safety.

The commenter taking issue with granting preeminence to damage tolerance over safe life as a method of achieving the required fatigue strength also makes the following additional points:

1. "Forcing the preeminent use of the damage tolerant concepts may in some circumstances degrade [sic] safety."

2. "The differences between the airplane environment and the helicopter environment do not justify transfer of the fixed-wing airplane experience (in damage tolerant design)."

3. "The applicant should have the uninhibited option to select the procedures that . . . will produce the best overall results."

The FAA agrees, in part, with the initial and first two additional points but not with the third additional point that "the applicant should have the uninhibited option to select . . . procedures . . . ."

The ANPRM proposed to add damage tolerance to the fatigue evaluation of rotorcraft structure but not to establish preeminence of damage tolerance procedures over safe-life procedures. The goal of adding damage tolerance requirements is to increase the structural dependability of transport rotorcraft with a resulting savings in equipment costs and lives. As discussed in the public meeting of February 8, 1983, damage tolerance and safe life are considered "as complementary approaches." A "filter approach" was discussed during the public meeting which illustrates the complementary nature of damage tolerance relative to safe life. A design was described as being "filtered" first through one evaluation (damage tolerance or safe life) and then through the other. To accentuate that damage tolerance is proposed as a complementary approach to safe life (and not to preempt safe life), § 29.571 (b), (c), and (d) as proposed in the ANPRM have been combined into one paragraph (b) by this proposal. The newly proposed § 29.571(b) for fatigue tolerance evaluation requires a safe-life substantiation for each part of the structure which could contribute to a catastrophic failure. In addition, the current proposal will require a complementary design of damage tolerant features where practical. This complementary approach will provide an improvement in the structural dependability of transport category rotorcraft with a resulting savings in equipment costs and lives, while allowing continued use of well established safe-life substantiation programs by the industry. It will recognize that "industry experience has been to provide a safe-life structure, whether it be single load path or redundant" and that "the combined safe-life/damage tolerance approach is more adaptable to rotorcraft structure than a pure damage tolerance approach." To insure that damage

tolerant design is incorporated into the rotorcraft structure if the state of the art permits, § 29.571(b)(2)(v) provides that the applicant must comply with damage tolerance requirements unless the applicant establishes that to do so for a particular structure would be impractical. Stated otherwise, if the state of the art permits, a particular rotorcraft structure must incorporate damage tolerant design features.

One commenter states that "the rule as proposed (in the ANPRM) primarily addresses damage tolerance aspects of slow crack growth, single load path structures." The commenter further states, "It should be indicated that there are also other methods of achieving damage tolerance such as multiple/alternative load paths." The FAA is aware of multiple load path techniques of achieving damage tolerance as shown in the ANPRM background material which contained the statement "recent advances have been made in civil helicopter use of composite construction . . . redundant structural design techniques . . ." and the ANPRM was not intended to primarily address damage tolerance aspects of slow crack growth, single load path structures. In fact, because of the high cycle load spectrum of helicopter operations and because of the lack of extensive fracture mechanics (da/dN) data for low stress/high cycle operations, it is considered that a multiple load path structure or a composite structure (a special kind of multiple load path structure) shows greater promise than metallic, single load path structure in achieving damage tolerance in future transport category rotorcraft. The proposed AC 29.571-X expands even further upon the use of multiple element load paths as a means of providing damage tolerance.

No objections were raised to including all critical structure (not just flight structure) in the fatigue evaluation, so the title of § 29.571 is proposed as "Fatigue and damage tolerance evaluation of structure." rather than ". . . evaluation of flight structure." Also, a special reference to landing gear is proposed for § 29.571(a).

One commenter proposes that definitions be added to 14 CFR Part 1 for "damage tolerance," "fail-safe," and "safe life." Although these definitions, as well as others, are in proposed AC 29.571-X, the FAA considers it inappropriate to add them to 14 CFR Part 1 until agreement can be attained on definitions applicable to fixed-wing aircraft, rotorcraft, engines, and propellers.

Another commenter recommends that the proposed wording of § 29.571(a) be changed from ". . . an evaluation of the

strength, detail design, and fabrication must show that catastrophic failure due to fatigue, corrosion, or accidental damage will be prevented throughout the operational life of the rotorcraft . . ." to ". . . an evaluation of the strength, detail design, and fabrication must show that catastrophic failure due to fatigue, corrosion, or accidental damage will be avoided throughout the replacement time, if any, established for each part of the structure." The use of "avoid" rather than "prevent" is proposed as being more goal-related rather than an absolute guarantee (which is impractical) and is consistent with § 25.571. The FAA agrees, and the proposal has been reworded accordingly.

One commenter states that the phrase "operational life," while appropriate for fixed-wing aircraft, is not considered practical or warranted for rotorcraft. The FAA agrees, and the proposal has been changed accordingly.

The commenter further recommends that the proposed § 29.571(a) wording ". . . for each part of the structure which could contribute to a catastrophic failure . . ." be changed to ". . . which could cause a catastrophic failure." The commenter states "use of words 'could contribute' suggests consideration of any potential event no matter how illogical." The FAA disagrees. The wording "could contribute" has the connotation of consideration of "life remaining" after a single element failure even if the failure did not immediately "cause" catastrophic failure. Also, the wording is similar to that of § 25.571(a) which has been applied with no interpretation problems in this area.

Another commenter recommends consideration of significant numbers of flights ". . . at  $V_{NO}$  and with the commencement of the flight at maximum allowable gross weight." The FAA agrees, and proposed § 29.571(a)(iii) specifies ". . . loading spectra as severe as those expected in operation." "External load operations" are specified as well as "high frequency per hour power cycle operations." Also, the proposed AC 29.571-X includes guidance for consideration of three types of operations: long flights (with high cruise speeds); typical, general types of operations; and short flights (with large numbers of power cycles per hour).

One commenter recommends that consideration of loads with worn components be considered. This recommendation is beyond the scope of the current program. Rotorcraft contain literally scores of mechanical components subject to wear. Although

consideration of wear effects is accomplished in general by ground endurance testing, ground component testing, and by prototype flight testing, specific wear requirements would be impractical to define because of the interrelationship between the wear of one part on the loads of one or more other parts. A program to consider literally hundreds of wear versus load relationships is considered beyond the scope of this program. Since efficient, recognized analytical techniques are not available, testing of every wear combination state is impractical from a time and cost standpoint.

One commenter states a belief "that no critical component should have a fatigue life limit less than 10,000 hours." A 10,000-hour life is an admirable goal, but the current state of the art of fatigue design of rotorcraft structure does not allow attainment of that goal for all critical components. This, in fact, is the primary technical reason for proposing that critical structure be "damage tolerant."

One commenter recommends changing "corrosion" to "environmental effects" in § 29.571 to more broadly consider the effects of moisture and to consider other environmental factors such as fuel, hydraulic oil, etc., on structural strength, and another commenter recommends adding "intrinsic/discrete damage" to more explicitly cover damage common to structure such as composite construction. The FAA agrees, and the recommended changes are included with this proposal.

The commenter further recommends that damage tolerance to mechanical components (gears, bearings, etc.) be added to § 29.571 or § 29.917. This proposal is beyond the scope of this program as well as beyond the state of the art of current gear and bearing design.

The commenter also recommends that drafts of proposed AC 29.571-X and AC 20-107 be available for review with this proposed amendment. The FAA agrees, and copies of proposed AC 29.571-X and AC 20-107, Revision A, may be obtained by contacting the person identified under the caption "FOR FURTHER INFORMATION CONTACT."

In addition, the commenter recommends that "helicopter" be changed to read "rotorcraft" in proposed § 29.571(a)(1)(i) and that the phrase "for items identified above in (a)(1)(i)" be added to proposed § 29.571(a)(1)(ii)(A) after "loads or stress" for clarity. The FAA agrees, and the appropriate changes have been made.

The commenter also stresses the importance of providing guidance in AC

29.571-X for the loading spectra requirements of § 29.571(a)(1)(iii). The commenter also recommends that research is needed into operational spectra and that operators need to record and feed back operational data to the manufacturers. The FAA agrees with the need for guidance on loading spectra, and it will be provided in AC 29.571-X. Research into operational spectra and operators' feedback to manufacturers, while desirable, is beyond the scope of this program.

An additional commenter recommends that the words "and material" be added to proposal § 29.571(a)(2) after the phrase "of similar design." The previously proposed § 29.571(a)(2) has been deleted, and the wording of the currently proposed § 29.571(b) accomplishes the intent of the recommendation.

One commenter recommends that the words "replacement time" be inserted into proposed § 29.571(a)(3) after "inspections" and before "or other procedures" for clarity. The FAA agrees, and the change has been made.

Another commenter recommends that "fail-safe" be deleted from the parenthetical term following damage tolerance to avoid confusion. The FAA agrees, and the term "fail-safe" is removed from proposed § 29.571.

The commenter also recommends that proposed § 29.571(b)(1) be changed to read "probable types, locations, and modes of damage due to fatigue, corrosion, intrinsic/discrete damage, or severe accidental damage." The FAA agrees with adding the term "intrinsic/discrete" to clarify a type of damage common to composite structures but considers adding the words "types" before "locations, and modes" and "severe" before "accidental damage" unnecessary.

The commenter further recommends that proposed § 29.571(b)(2) be changed to state "flight-by-flight load application is recommended." The FAA disagrees with adding such wording to § 29.571(b)(2). This type of wording is considered unnecessarily detailed for a regulation and more appropriate for advisory material. AC 29.571-X proposes to include detailed technical considerations of this type.

Two commenters object to the inclusion of an explicit 0.125-inch-radius flaw size for single load path structure in proposed § 29.571(b)(3). Both commenters recommend a more general requirement which considers initial detectability and subsequent growth under repeated loads (similar to the § 25.571 requirement). The FAA agrees, and the explicit 0.125-inch-radius flaw requirement has been removed.

One commenter recommends that proposed § 29.571(b)(4) be changed to add the phrase "consistent with inspection techniques" after the phrase "will become readily detectable." The FAA agrees, and the intent of this recommendation is included in the newly proposed § 29.571(b)(2)(ii).

Another commenter proposes that strength after failure in proposed § 29.571(b) be allowed to be reduced below limit strength, in some cases, to a level which would allow flight with loads "which are reasonably expected to occur on the (one) flight." The FAA disagrees since such loads would be impractical to calculate with accuracy, and the resulting strength would be difficult to demonstrate in cases where factors such as stiffness are also greatly reduced. Also, limit loads are considered the minimum strength acceptable to provide the necessary degree of damage tolerance.

One commenter requests that proposed § 29.571(c) be changed by adding the phrase "and having used appropriate scatter factors" after the phrase "test evidence." The FAA disagrees with adding a specific reference to "appropriate scatter factors" in the regulatory material since the concept of applying scatter factors and material reduction factors has not been a problem. Since the specific factors to be applied have resulted in some questions, AC 29.571-X is proposed to provide guidance on the application of scatter factors and material reduction factors.

Another commenter proposes a correction in proposed § 29.571(c)(2) to the reference to Section A29.5 (which should have referenced Section A29.4). The FAA agrees, and in proposed § 29.571(b)(1)(ii), the reference to Section A29.5 has been corrected to read "Section A29.4."

One commenter asks for clarification of the "combination of replacement time and damage tolerance evaluations" proposed in § 29.571(d) of the ANPRM, and requests an example. Although § 29.571(d) has been removed from the current proposal, the "combination of replacement time and damage tolerance" is still allowed by the proposed § 29.571(b)(1)(ii) and (b)(2). This requirement is not wholly new; it is a continuation of existing § 29.571(e) except that the fail-safe requirement is changed to a damage tolerance requirement. An example of the current "combination of replacement time and fail-safe evaluations" is a structural link (or other part), basically designed to be fail-safe but containing an area inaccessible for inspection (this area

may be evaluated by safe-life techniques). The link may then have a replacement life, but most areas will be fail-safe. The current proposal will still allow combinations of evaluations, as in the past, except for two changes. (1) All critical parts must be evaluated using safe-life techniques (including parts replacement, if required), and (2) damage tolerant design features must be provided (and evaluated) where practical (when damage tolerant design for specific rotorcraft structure is within the state of the art).

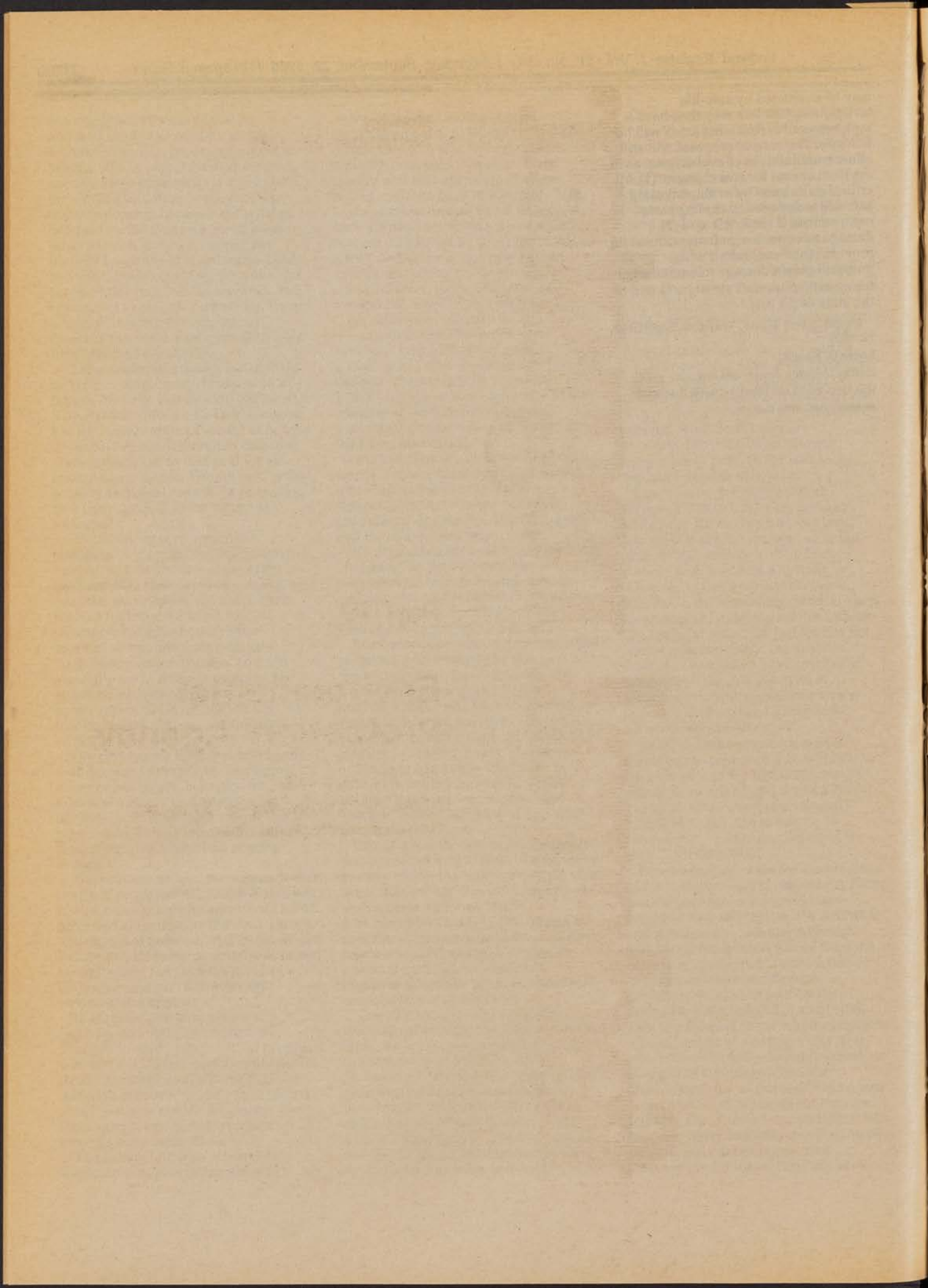
Issued in Fort Worth, Texas, on September 12, 1986.

**Roger G. Knight,**

*Acting Director, Southwest Region.*

[FR Doc. 86-21325 Filed 9-19-86; 8:45 am]

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# Environmental Protection Agency

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Monday  
September 22, 1986

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## Part IV

### Environmental Protection Agency

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40 CFR Part 271

State Hazardous Waste Program  
Requirements; Final Rule

ENVIRONMENTAL PROTECTION  
AGENCY

## 40 CFR Part 271

[FRL 3042-7]

State Hazardous Waste Program  
RequirementsAGENCY: Environmental Protection  
Agency.

ACTION: Final rule.

**SUMMARY:** The Environmental Protection Agency is today promulgating amendments to the requirements for State hazardous waste programs. The final rule specifies deadlines for State program modifications and makes other changes to the existing regulations to implement the State authorization provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA). This is the first of a set of companion rules to EPA's final codification rule, published July 15, 1985 (50 FR 28702), which codified in regulations those requirements specified by HSWA which took effect immediately or shortly after enactment.

**DATE:** These regulations become effective September 22, 1986.

**FOR FURTHER INFORMATION CONTACT:** The RCRA Hotline, toll-free (800) 424-9346 or in Washington, DC at (202) 382-3000, or Marty Madison, State Programs Branch, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC, 20460. Telephone: (202) 382-2210.

**SUPPLEMENTARY INFORMATION:**

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## I. Authority

These regulations are issued under authority of sections 1006, 2002(a), and 3006, of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6905, 6912(a), and 6926.

## II. Background

On November 8, 1984, the President signed into law the hazardous and Solid Waste Amendments of 1984 (HSWA). This statute makes many changes to EPA's existing hazardous waste management program. The statute further provides that State programs may receive interim or final authorization to carry out the HSWA provisions in lieu of EPA. Interim authorization is a temporary authorization which is granted if EPA determines that the State program is "substantially equivalent" to the Federal program. On the other hand, final authorization is granted permanently to a State by EPA if the Agency finds that the State program: (1) Is "equivalent" to the Federal program, (2) is consistent with the Federal program and other

State programs, and (3) provides for adequate enforcement.

On July 15, 1985, EPA published a final rule that amended EPA's hazardous waste regulations to reflect those statutory provisions that have immediate or short-term effects on the regulated community and States (50 FR 28702-28755). That rule is referred to hereafter as the "final codification rule". The preamble to the final codification rule provides in detail the background and purpose of EPA's efforts to incorporate into the existing Subtitle C regulations a set of requirements from the HSWA. Briefly, the final rule simply adds the statutory language to the existing Subtitle C regulations, with a preamble that provides our legal interpretations of that language. The rule also makes changes to provide for HSWA interim and final authorization. The preamble to the final codification rule discusses the impact of HSWA on State authorization (see 50 FR 28726 to 28733).

On January 6, 1986, EPA proposed changes to the Subtitle C regulations that were more than mere transpositions of the statutory provisions which take effect immediately or shortly after enactment (see 51 FR 496-504). The proposal dealt with State authorization issues that were logical outgrowths of the new Amendments, rather than matters mandated for immediate implementation by the statute. In particular, the notice proposed changes to the Part 271 State authorization regulations in four areas: (1) The requirements States must meet to obtain and retain final authorization, (2) the deadlines by which States must revise their programs to reflect changes in the Federal program, (3) the expiration date for interim authorization under section 3006(g) of RCRA, as amended by HSWA, and (4) application procedures for section 3006(g) interim authorization. The proposed rule was the first of a few companion rules to the final codification rule (see also 51 FR 10706-10723, March 28, 1986, regarding liners and corrective action).

The Agency received a number of comments on these proposed changes to Part 271. We have evaluated these comments carefully, and, where appropriate, have modified the regulations accordingly. This notice

promulgates in final form the regulation that was proposed on January 6, 1986, and provides EPA's response to the comments received on that proposal. This preamble also provides a detailed discussion of the provisions of the final rule.

### III. Discussion

This section of the preamble discusses the provisions of the final rule being promulgated today. Any differences from the January 6, 1986 proposal are described in detail. This section also responds to many of the comments received on the proposal. EPA's response to the remaining comments can be found in Section IV, Response to Comments.

#### A. General Requirements for Final Authorization

##### 1. Table of HSWA Regulations and Self-Implementing Provisions

In the July 15 final codification rule, the Agency added new § 271.1(j) to identify the Federal program requirements and prohibitions that are promulgated or take effect pursuant to HSWA. These requirements included the regulations implementing HSWA as specified in the table accompanying § 271.1(j) and any self-implementing HSWA provisions. In the January 6 proposal, the Agency proposed to add a statement to § 271.1(j)(2) specifying that the table in § 271.1(j) indicates the promulgation date of the regulation which may differ from the effective date. Several commenters suggested that the table include the effective date as well as the promulgation date. We agree with this suggestion, and have modified Table 1 accordingly. In today's rulemaking we are reprinting the current table in its entirety for ease of the user. Future HSWA rules will be added to the table in chronological order of promulgation date.

In the preamble to the proposal we also discussed the possibility of adding a second table to § 271.1(j) that would identify the HSWA self-implementing statutory provisions that take effect independent of any rulemaking action. A commenter supported this idea and the Agency believes that such a table would provide useful information regarding the self-implementing statutory provisions. Accordingly, today we are adding a new table to the regulations. Table 2 lists each HSWA self-implementing provision, indicates the effective date of the provision, and provides the appropriate statutory citation. Since some of the self-implementing provisions have been incorporated into the EPA regulations, the last column in

the table references the appropriate regulation where applicable. Statutory requirements that are not yet effective are included in this table for future reference.

##### 2. Termination of Interim Status

The Agency proposed to amend § 271.13(a) to provide that States may authorize owners and operators of facilities with interim status to remain in operation until interim status terminates pursuant to 40 CFR § 270.73(c)-(f). Commenters did not object to the proposed amendment. The amendment to § 271.13(a) is necessary to assure that State programs conform to the HSWA requirements concerning automatic termination of interim status if Part B permit applications and certifications of compliance are not submitted within specific time frames. Therefore, the Agency is promulgating the amendment to § 271.13(a) as proposed. Under this new requirement, States must provide for termination of the State analogue to Federal interim status for those facilities that would lose interim status pursuant to § 270.73(c)-(f).

##### Delisting

In the final codification rule, the Agency amended § 260.22 to include the specific criteria and procedures for delisting as set forth in HSWA. In the January 6 proposal, the Agency proposed to amend § 271.9 by providing that a State is not required to have a delisting mechanism; however, States with delisting mechanisms must act consistently with the Federal delisting procedures set forth in § 260.22. The purpose of this proposed amendment was to clearly define the State authorization requirements under HSWA for States adopting delisting provisions.

After considering the proposed language, the Agency has decided to make additional modifications to § 271.9. Today's rule still provides that States are not required to have a delisting mechanism in order to receive or maintain authorization. If a State does have a delisting mechanism and wishes to be authorized for delisting in lieu of EPA, then the State must have regulations equivalent to §§ 260.20(b) and 260.22. The Agency slightly modified the proposed language by referring to § 260.20(b) in addition to § 260.22 and requiring States provide for public notice and opportunity for comment before granting or denying delisting requests.

The modified language in today's rule is intended to avoid any confusion that may have been created under the proposal. As discussed previously, the

proposal specified that State programs must be equivalent to § 260.22. Section 260.22 provides that any person seeking to exclude a waste may use the procedures in § 260.20. The Agency intended that only § 260.20(b) should be necessary for State authorization, not § 260.20(c)-(e). The State must be equivalent to § 260.20(b) since this provision specifies information that must be submitted by the petitioner. Sections 260.20 (c), (d), and (e) define EPA's procedures for processing delisting requests. The State does not have to use the same procedures as does EPA as long as the State provides for notice and opportunity for comment when granting or denying delisting requests. Therefore, the Agency changed the language in today's rulemaking to specifically indicate that the delisting authorization requirements include provisions equivalent to §§ 260.22 and 260.20(b), as well as provisions for public notice and opportunity for comment.

One commentator suggested that § 271.9 specify that a State may delist wastes that are controlled under the State program but are not considered hazardous wastes by the Federal program. Section 271.9 does not prohibit a State from delisting such wastes. Since these State-controlled wastes are beyond the scope of the Federal program, any activities associated with those wastes are not a part of the "authorized" State program and are therefore not addressed by § 271.9.

Another commentator requested that § 271.9 specify that EPA may grant a delisting even if the State does not have a delisting mechanism. Although EPA could take such an action, the EPA delisting would relieve the petitioner only from the applicable Federal requirements. If the State regulates a waste that has been delisted by EPA, then obviously the waste is still subject to State control while managed within the State. While this is a factual representation of the potential interrelationship of the Federal and State delisting mechanisms, it is not an issue appropriate for a State authorization regulation.

##### 4. Initial Applications

The Agency proposed an amendment to § 271.3(f) providing that State applications for final authorization may be reviewed on the basis of Federal self-implementing statutory provisions or regulations in effect 12 months prior to the State's submission of its official application. The Agency used the term "may" in the proposed amendments to indicate that States are not precluded

from seeking authorization for requirements taking effect less than 12 months prior to the State's submittal of its final authorization application. In order to clarify § 271.3(f), the Agency is today amending the provision by providing that States may be authorized for requirements taking effect less than 12 months before a State submits its official application. However, the basic requirement of this section remains unchanged in today's rule—State applications must, at a minimum, reflect the Federal requirements in effect 12 months prior to application submittal. Initial applications that do not address all such requirements will not be sufficient.

#### B. Clusters

Under § 271.21(e)(2) as currently promulgated, States with final authorization are required to modify their programs to adopt new Federal requirements within a one- or two-year time frame from the promulgation date of a regulation or the effective date of a self-implementing statutory amendment (one year if only regulatory changes are needed and two years if statutory changes are necessary).

In the January 6 proposal EPA proposed to amend the existing deadlines in § 271.21 by which States must revise their programs to reflect changes to the Federal program. Under the proposal the Agency chose an annual deadline for groups ("clusters") of Federal program changes occurring after June 1984. The cluster deadlines varied for HSWA and non-HSWA requirements. Non-HSWA changes were grouped in annual clusters and the State modifications for all such provisions contained in a cluster would be due one year after the cluster end date (or two years if State statutory changes are needed). For HSWA provisions, the proposal contained a one-time multi-year cluster to encompass the HSWA changes that occur on or before June 30, 1987, with the exception of the availability of information provision in § 3006(f) of HSWA. States would be required to adopt these HSWA provisions by July 1, 1988 (or July 1, 1989 for the provisions that necessitate State statutory changes). The Agency required States to pick up § 3006(f) by July 1, 1986 (or July 1, 1987 if a statutory change is required).

In general, commentors voiced strong support for the clustering approach but in several instances suggested modifications. The following sections describe the final cluster rule, including any modifications to the rule, and respond to the comments received on the cluster proposal.

#### 1. Cluster Period

As discussed above, the Agency proposed to amend § 271.21(e)(2) to cluster Federal program changes occurring after June 1984. The cluster dates varied somewhat depending on whether the program revisions concerned HSWA or non-HSWA requirements. However, the common factor for all program revisions was that the Agency proposed June 30 as the end date for all clusters. Commenters supported the June 30 date. As discussed in the preamble to the proposal, the Agency chose this date to facilitate submission of statutory amendments to State legislatures. The Agency is today promulgating amendments to § 271.21(e)(2) which establish June 30 as the end date for all clusters.

#### 2. Non-HSWA Clusters

Under the proposal, the Agency created an annual cluster for Federal non-HSWA program changes occurring after June 1984. The non-HSWA annual cluster encompasses all Federal requirements promulgated in a twelve-month period running from July 1 of one year to June 30 of the next year. The one year/two year clock in § 271.21(e)(2) starts simultaneously for all requirements on July 1 immediately following the annual cluster end-date. For example, a regulation published by EPA in October 1984 would be in the first cluster covering the time period from July 1, 1984 to June 30, 1985. The program modification clock would start on July 1, 1985, and no State would have to complete program modifications for the regulation until July 1, 1986 (or July 1, 1987, where the State has to change its statute).

Almost every commentor expressed strong support for a cluster approach for the non-HSWA regulations. Indeed, many States remarked that without such an approach they would find it nearly impossible to adopt the required changes within the current deadlines. Several States commented that at a minimum, they needed the flexibility offered by the proposed § 271.21(e)(2)(ii) deadlines because they were required to submit their regulations for legislative review. In some of these States, the legislature only meets once a year and the regulations must be submitted several months prior to the legislative session. In addition to these legislative constraints, States noted that they have detailed and prolonged administrative procedures to follow prior to regulatory adoption. However, one commentor opposed the clustering approach for non-HSWA requirements, noting that by giving States more time to adopt

program changes, such an approach would delay implementation of non-HSWA requirements.

While the clustering approach may entail some implementation delay, the Agency believes that the flexibility in the proposed § 271.21(e)(2)(ii) deadlines is, as suggested by the commentors, necessary to facilitate submission of proposed legislative or regulatory amendments to State legislatures. Furthermore, the Agency believes that any delay in regulatory implementation would be mitigated for those Federal regulations which had an effective date six months subsequent to the promulgation date. As discussed elsewhere in this preamble, the time clocks for program revision run from the promulgation date as opposed to the effective date of a regulatory amendment. Therefore, any delay in the State's implementation of regulatory amendments as a result of the cluster rule would be less severe for those Federal rules with a delayed effective date. Accordingly, the Agency is adopting the proposed amendment to § 271.21(e)(2)(ii) as a final rule.

#### 3. HSWA Clusters

The proposal contained a one-time multi-year cluster to encompass the HSWA provisions that occur between the date of enactment (November 8, 1984) and June 30, 1987. States would be required to adopt these HSWA provisions by July 1, 1988 if only State regulatory changes are needed, or July 1, 1989 for any specific HSWA provisions that necessitate State statutory changes. In the preamble to the proposal we explained that the June 1987 date was chosen because we expect the bulk of the HSWA changes to the Federal program to occur prior to that date. Under the proposal, any HSWA changes occurring after June 30, 1987 would be included in annual clusters. In the preamble to the proposal we solicited comments from State agencies regarding these deadlines for HSWA revisions.

Nine States commented that they are extremely concerned about being able to modify their program for HSWA by July 1988 (or July 1989 if statutory amendments are required). The primary reasons for their concern stemmed from the volume and complexity of HSWA changes. In addition, the commentors cited lengthy legislative and administrative procedures as an impediment to adopting regulations within the proposed time frames. A few States noted that their timeframes for regulatory development exceeded six months without taking into account any redrafting necessitated by EPA

comments. Many commentors requested a delay of the HSWA cluster date, noting the difficulty in obtaining piecemeal statutory amendments from a legislature. Given these factors, the States are doubtful that the requisite amendments could be made in a timely fashion.

The States also opposed adopting the Federal program before it is fully developed, saying that it would be preferable to require States to pick up the HSWA program only after all the components of the Federal program were in place. The States remarked that it would be better to use their resources to assist EPA in the implementation of HSWA rather than making extensive changes to their program and preparing authorization applications. These commentors suggested that the revision deadline for the HSWA cluster be extended until 1990 or later.

In response to these comments, the Agency reevaluated the HSWA cluster deadlines. As a result of this reevaluation, the Agency is modifying the proposed rule in two aspects. First, we are leaving the special HSWA cluster period as proposed (November 8, 1984 to June 30, 1987), but the deadline for these revisions has been changed from July 1, 1988 to July 1, 1989. In addition, we are creating a second multi-year HSWA cluster for HSWA provisions that are promulgated during the period of July 1, 1987 to June 30, 1990. States must modify their programs for changes in the second cluster by July 1, 1991 (or 1992 if a statutory change is needed). Any HSWA changes occurring after June 30, 1990 will be included in the annual clusters.

The Agency believes that these two changes taken together provide the States with needed additional time to pick up the HSWA changes while still encouraging State assumption of the hazardous waste program. The first HSWA cluster should include the majority of the anticipated facility standards. (See the schedule of HSWA program changes in the preamble to the January 6 proposal, page 498.) Since this cluster contains the major components of the HSWA program the Agency believes that it is appropriate to extend the deadline for adopting these components by one year in order to allow States more time to make the requisite legislative and regulatory amendments. Since the HSWA provisions are automatically in effect in these States, we do not believe that extending the deadline by one year will have adverse environmental effects.

Although the concept of developing a second HSWA cluster was not specifically proposed, it was one of the

alternatives discussed in the preamble. One commentor specifically recommended the second HSWA cluster in addition to the proposed HSWA cluster. The Agency is today promulgating a second HSWA cluster for HSWA provisions that are promulgated between July 1, 1987 and June 30, 1990 in order to ease the State's administrative and legislative burdens in making program modifications. Since many of the HSWA self-implementing land disposal bans occur during this period, the Agency believes that as an administrative matter, it makes sense to cluster those requirements together. Under the proposal the HSWA provisions effective after July 1987 were part of the annual clusters. Accordingly, the Federal land disposal bans would have spanned three different annual clusters and authorized States would have been required to undertake three separate rulemaking actions. Under today's rulemaking the States will be able to wait until all of the land disposal bans take effect during this cluster period before they modify their program. The Agency believes that this approach is much more manageable for the States.

Several commentors had questions about how the application of the HSWA clusters would affect the availability of authorization. Sections 271.21(e)(2) (iii) and (iv) set forth cluster deadlines by which authorized States must modify their programs to pick up particular HSWA provisions. However, a State may apply for authorization for one or more of the available HSWA provisions prior to the cluster deadlines, and EPA encourages States to apply for authorization as soon as they can qualify. (HSWA provisions that are available for State authorization include self-implementing statutory provisions that have taken effect or regulations that have been promulgated.) Further, a State may satisfy the deadlines by seeking either interim or final authorization for such HSWA provisions. However, as discussed elsewhere in this notice, interim authorization will expire on January 1, 1993. Therefore, States are urged to seek final authorization instead of interim authorization whenever possible.

#### 4. State Availability of Information

As discussed in detail in the final codification rule, § 271.17 was amended to require State programs to provide for public availability of information. This provision requires that information obtained by authorized States regarding hazardous waste facilities and sites must be made available to the public in substantially the same manner and to the same degree as would be the case if

EPA were carrying out the RCRA program in the State. Although this requirement stems from HSWA (section 3006(f)), unlike other HSWA requirements it does not take immediate effect in authorized States. Therefore, authorized State programs need to be revised before this requirement will be effective. On January 6 we proposed that this provision be picked up by States by July 1, 1988 (or July 1987 if a statutory change is required). State program revisions for the public availability of information provision would thus be accomplished in accordance with the first cluster of non-HSWA requirements.

One commentor stated that the proposed cluster deadline was inappropriate because it delayed implementation of the provision. This commentor suggested that the deadline be November 8, 1985 (or November 1986 for statutory changes). In contrast, three commentors argued that the proposed cluster deadline did not provide States with enough time to develop equivalent requirements. One of these commentors specifically requested that the availability of information requirement be placed in the HSWA cluster absent specific language in HSWA to treat it differently from other HSWA requirements.

As described above, the operation of this provision is different from the other HSWA provisions since it does not take effect until the State revises its program. Consequently, the Agency believes that section 3006(f) should be treated differently than the self-implementing HSWA provisions. Accordingly, the Agency believes that it is inappropriate to include this provision in the HSWA cluster deadline. On the other hand, there is no compelling reason to treat this requirement any differently than the non-HSWA requirements which also require State revisions before becoming effective. Given the legislative and administrative constraints that States experience when making program modifications, the Agency believes that it is reasonable to require States to pick up this requirement pursuant to the timetable for the non-HSWA cluster. Therefore, today's final rule promulgating § 271.17(c) is unchanged from the proposal.

The Agency recognizes that this rule establishes a deadline for section 3006(f) changes that has already passed (July 1, 1986). However, States may qualify for an extension of time to meet the modification deadline. Moreover, as discussed below, where appropriate the Agency may choose to place some States on a schedule of compliance to adopt

the program revision in an expedited manner.

#### 5. State Schedules of Compliance

As indicated earlier, the majority of commentors indicated that they would have difficulty meeting the proposed § 271.21(e) cluster dates for changes to the HSWA, non-HSWA and section 3006(f) requirements. The above sections describe how today's final rule attempts to accommodate the concerns expressed by commentors regarding the proposed cluster deadlines. As discussed previously, today's rule extends the cluster deadlines for HSWA requirements and creates a new HSWA cluster in order to provide States with additional time to make programmatic changes. Also, the rule has a provision allowing a six-month extension where the State is unable to meet the deadline for HSWA, non-HSWA and section 3006(f) revisions. However, even with these provisions the Agency recognizes that States may still be unable to comply with some of the deadlines in § 271.21(e). Under the current regulations, failure to meet the deadlines would be grounds for the Administrator to initiate program withdrawal procedures. Such a result is somewhat draconian, given the inability of States to adopt the requisite statutory and regulatory amendments due to legislative and administrative constraints. On the other hand, the Agency does not want to extend the cluster deadlines in all circumstances because it wishes to encourage States to expeditiously adopt program revisions. In order to provide maximum flexibility for the States and EPA while ensuring that program revisions are expeditiously adopted, the Agency is today promulgating an amendment to § 271.21 allowing the Administrator to place States which fail to meet the revision deadlines on schedules of compliance on a case-by-case basis. (See the new § 271.21(g).) The use of schedules of compliance would be limited by the specific factors described below.

First, as a prerequisite to being placed on a schedule of compliance the State must have made a good faith effort to meet the deadlines, have been granted an extension pursuant to § 271.21(e)(3) and made diligent efforts to revise its program during the § 271.21(e)(3) extension. Section 271.21(e)(3) currently allows the Regional Administrator to grant up to six months extension for the program modification deadlines if the State adequately demonstrates that in spite of its good faith efforts, it is unable to meet these deadlines due to legislative or rulemaking impediments. States which are not granted this

extension are precluded from being placed on a schedule of compliance because they have not made a good faith effort to meet the deadlines. States must also demonstrate that they have made a diligent effort to revise their programs during the period of time for which they are granted an extension under § 271.21(e)(3). A diligent effort would, at a minimum, include the initiation of rulemaking and/or statutory amendments by the State.

Second, the State must demonstrate that it is making sufficient progress in adopting these changes. State progress will be evaluated by the Regional Administrator on a case-by-case basis. This evaluation will be based on such factors as the State's historical performance in adopting program changes and the impediments encountered for this particular modification. By definition, to demonstrate progress in making the requisite revisions, the State must indicate that it has gone beyond the initial good faith effort to qualify for an extension under § 271.21(e)(3).

Third, the State must submit a proposed timetable of statutory and/or regulatory modifications by the § 271.21(e)(3) extended deadline. This timetable must set forth interim milestones for achieving the modification within one year.

Fourth, schedules of compliance are limited to a duration of one year from the § 271.21(e)(3) extended deadline. This is to prevent States from unduly delaying implementation of the regulatory and statutory revisions. The Agency chose a year as the duration period because many State commentors requested an additional year to implement the HSWA changes due to the complexity and number of changes required. The Agency believes that this time period is also appropriate for the non-HSWA and section 3006(f) revisions since the cluster scheme will aggregate numerous and often unrelated rulemakings and require simultaneous State modifications for these requirements.

Fifth, any schedule of compliance must be published in the **Federal Register**. Ideally, the schedule would be included in a **Federal Register** notice indicating the Administrator's tentative or final decision concerning approval of other parts of the State's program. For example, if a State successfully modifies its program for all but one rule in a cluster, then the **Federal Register** announcing the approval of the State revision could also contain the State schedule of compliance for the one remaining rule to be picked up. If,

however, the Agency needs to place a State on a schedule of compliance independent of the approval process, the Agency would publish a separate **Federal Register** notice apprising the public of that fact.

Sixth, if a State fails to comply with its schedule of compliance, the Administrator may initiate program withdrawal pursuant to §§ 271.22 and 271.23. This is to prevent any further delay of implementation of the necessary regulatory and/or statutory provisions.

Given the above limitations, the Agency believes that a schedule of compliance is an appropriate vehicle to ensure implementation of the necessary regulatory/statutory amendments while addressing commentors' concerns about the need for additional time to implement program revisions. We recognize that the use of schedules of compliance may delay implementation of non-HSWA and section 3006(f) requirements in some States. However, any such delay will be offset by maintaining State authorization continuity for States that have made reasonable progress toward adopting revisions. The goals of the RCRA program would not be furthered if the Agency withdrew the program authorization from such States. Although we expect to use schedules of compliance infrequently, we believe that it is an important mechanism to allow State flexibility in adopting program changes and to prevent premature program withdrawals.

An example of when schedules of compliance could be appropriate is for the RCRA section 3006(f) availability of information requirement. This provision is included in the non-HSWA cluster for which modifications are due by July 1, 1986 (see the previous discussion in the preamble.) Due to the complexity of this provision, EPA informed the States that it was developing detailed guidance to define the State provisions that are needed in order to meet the section 3006(f) requirement. The EPA guidance was not available until August 1986, which obviously did not allow enough time for States to make program changes by the cluster due date. Even if the Regional Administrator extends the deadline to January 1, 1987 pursuant to § 271.21(e)(3), the Agency expects that some States will not have their program modifications in place by then despite their best efforts. Therefore, if a State meets all the criteria in § 271.21(g)(1), it should be able to qualify for a schedule of compliance for picking up the section 3006(f) provisions.

However, State schedules of compliance should not be used to postpone State program revisions if the State is reluctant to make program changes in a timely manner or if it does not make diligent efforts to make these changes. In such a case, EPA will not provide the State with a schedule of compliance, but will instead initiate program withdrawal procedures pursuant to §§ 271.22 and 271.23.

#### 6. Use of Promulgation Dates to Define Clusters

Under the proposal, the deadlines in § 271.21(e) run from the date that Federal regulations are promulgated. (See § 271.21(e)(2).) Ten States requested that the clusters be determined by Federal regulations that take effect during the cluster period instead of merely being promulgated. The reasons provided for this suggested approach were: (1) States should not be required to make changes pursuant to Federal rules that haven't yet taken effect; (2) EPA sometimes issues "interim final" rules that subsequently change; (3) the States would have more time to complete their regulatory development process by the cluster deadlines if "effective dates" defined the cluster deadline; and (4) since "effective dates" are used to determine which Federal requirements must be addressed in initial authorization applications, there would be less confusion if "effective dates" were also used for program revisions. Although these State comments have some merit, the Agency believes that the modifications to the clustering scheme contained in today's rule would significantly ease these problems. As discussed previously, today's rulemaking extends the HSWA cluster deadline, creates a second HSWA cluster, and allows schedules of compliance. These changes provide for greater flexibility in the final rule than was contained in the proposal which should mitigate many of the "timing" concerns expressed by the commentors regarding the use of the "promulgation date".

Furthermore, we believe that using effective dates in defining clusters as suggested by the commentors could result in an unwarranted delay in adopting program revisions. As an example, the definition of solid waste was promulgated on January 4, 1985, and became effective on July 5, 1985. Absent any extensions, the cluster schedule being promulgated today requires a State modification by July 1986. However, if the effective date was used to determine the cluster, then the State modification would be due July

1987. There would be a two and one-half year delay between the Federal program change and the State modification, and if a statutory change were needed there could be up to a three and one-half year delay. Except where a State has made diligent, good faith efforts to revise its program, we feel that such a delay is unreasonable.

As noted above, the States objected to making changes to their programs before the Federal rules take effect and further pointed out that an EPA interim final rule may change before coming effective. Since the cluster scheme requires a State to change its program less frequently (i.e., annually at most), in practice most of the Federal regulations will be effective before the State has formally initiated its changes. Finally, the Agency now rarely promulgates interim final RCRA rules. Since January 1983, of the 30 final RCRA rules, only one was an "interim final" rule. Therefore, we believe this concern is unwarranted.

The final objection regarding the use of "promulgation" dates for clusters was that it would create confusion since the "effective date" is used to determine what rules must be included in a State's initial application for final authorization. As discussed in section A.4 above, the requirement for using the effective date for initial applications is specified in the RCRA statute. (See RCRA section 3006(b).) Section 271.3(f) merely incorporates the statutory language. Since there is no such statutory requirement with regard to authorization of program modifications, the agency has devised a system for State revisions that makes the most sense for purposes of implementing the RCRA program in a timely fashion. Moreover, the Agency believes using effective dates to define clusters would lead to far greater confusion since some rules have numerous effective dates. For example, the used oil rule promulgated on November 29, 1985 has effective dates of December 9, 1985, March 31, 1986 and May 29, 1986 for its various provisions. State revision deadlines could become very confusing if a rule like the used oil rule happened to fall into separate clusters.

For these reasons we have maintained the use of the promulgation date to determine the composition of clusters. The Agency believes that the modifications to § 271.21(e)(2) being promulgated today will minimize commentors' concerns about the use of the promulgation date to define cluster periods.

#### 7. Self-Implementing Statutory Provisions

The Agency proposed an amendment to § 271.21(e) providing that States have to modify their programs pursuant to either a self-implementing HSWA requirement or an implementing regulation that has been previously promulgated. The purpose of the amendment was to alleviate any confusion which may have arisen as to whether the cluster deadlines in § 271.21(e) were determined by the rules codifying the self-implementing amendments into the RCRA regulations or the self-implementing provisions themselves. As discussed in the proposal, the revision "clock" starts on the earlier of these dates. That is, if a HSWA requirement takes effect before EPA has published any implementing regulations, then that date determines the appropriate cluster for the requirement. If, however, EPA promulgates a revision incorporating a statutory provision before the provision takes effect, then the date of the regulation determines the appropriate cluster, not the effective date of the statutory provisions.

A few commentors criticized the amendment to § 271.21(e) stating that a HSWA provision should not be included in a cluster pursuant to the effective statutory date if the Agency plans to issue subsequent regulations implementing the statutory provision. The commentors were concerned that States would be in the midst of rulemaking proceedings when the Agency would issue more extensive regulations which the State would be required to adopt. The commentors requested that the § 271.21(e) deadlines be established by the issuance of the implementing regulations instead.

The Agency appreciates the commentors' concerns but feels that these concerns have been mitigated by the Agency's decision to adopt two HSWA cluster periods spanning a period of several years. By adopting this approach, the Agency believes that it is likely that the self-implementing statutory provisions and the regulations implementing these provisions will be in the same cluster, minimizing the likelihood that States will be required to adopt more than one regulatory amendment for a specific area.

If an instance occurs where the regulations codifying the self-implementing provisions and the self-implementing statutory provisions are not in the same HSWA cluster, the Agency believes that it is appropriate that States adopt the provision first

taking effect. The States will have at least 12 months' notice before they would be required to adopt any new Federal requirement. The Agency believes that amount of time is sufficient notice. Furthermore, if States are unable to meet the § 271.21(e) deadline and they have demonstrated a good faith effort to make the program changes, they would qualify for a six-month extension and, if necessary, they may subsequently be placed on a schedule of compliance which would allow additional time for regulatory adoption. Given these factors, the Agency is today promulgating the amendment to § 271.21(e) as proposed.

#### 8. State Equivalence for Revisions

In the preamble to the proposal, the Agency stated that it planned to add language to Part 271 clarifying that States must adopt analogues to all requirements in Parts 260-268 and all self-implementing statutory provisions unless otherwise provided in Part 271. The purpose of the preamble language was to ensure that there was a continuing obligation for a State program to remain equivalent to EPA's program by requiring States to adopt the appropriate revisions to the Federal program. Today's rulemaking contains such language in several different regulatory amendments.

The Agency has amended §§ 271.10 and 271.11 to require that unless otherwise provided in Part 271, State programs shall have standards for generators and transporters which are at least as stringent as any revisions EPA promulgates after July 1, 1984 to the generator and transporter standards at 40 CFR Parts 262 and 263. The Agency chose the July 1, 1984 date because it was the first annual cluster date set forth in § 271.21 and all revisions to the generator and transporter standards promulgated prior to that date have already been incorporated in the Part 271 regulations. As a result of today's amendments to §§ 271.10 and 271.11, States have a continuing obligation to remain equivalent to EPA's generator and transporter requirements under Parts 262 and 263 unless otherwise specifically provided in Part 271.

Under the existing Part 271 regulations, States already have an obligation to remain equivalent to the Parts 261, 264, 265 and 266 regulations. (See 271.9, 271.12(j), and 271.13(a).) Accordingly, the Agency is not promulgating Part 271 amendments in today's rulemaking with respect to these EPA requirements.

The Agency considered whether or not it would need to promulgate amendments requiring States to adopt

facility standards equivalent to all revisions to the Part 124 and Part 270 standards. Section 271.14 requires States to be equivalent to some specific provisions in Part 124 and Part 270. Since States are not required to adopt all of the Part 124 and Part 270 regulations (for example, appeal procedures, stays of permits, R&D permits and permits by rule are not required to be adopted by States), it would be inappropriate to promulgate language requiring States to adopt all revisions to Parts 124 and 270. Therefore, the Agency is not promulgating amendments to § 271.14 in today's rulemaking. If the Agency in the future proposes to amend Part 124 and Part 270 and such proposed amendments are not appropriately reflected in § 271.14, the Agency will initiate rulemaking proceedings for § 271.14.

In some cases the self-implementing HSWA requirements have not been codified in the Federal regulations. Therefore, since Part 271 is currently structured to require States to adopt analogues to specific regulatory provisions, it does not address the HSWA requirements that are imposed only by statute. Therefore, in today's rulemaking the Agency is adding a new § 271.25 to clarify that authorized States are required to adopt standards at least as stringent as the self-implementing HSWA requirements and prohibitions. Section 271.21(e)(2) already provides dates by which a State program must adopt the HSWA self-implementing provisions.

#### 9. State Submission of Program Modifications

One aspect of the revision process that received significant attention from the commentors was the timeframe for submission of authorization documents subsequent to the completion of a State program modification. The current requirements provide that within 30 days of a State modification the State must submit the appropriate authorization documents (§ 271.21(e)(4)). We did not propose to change this requirement. However, a number of commentors requested that this provision be amended to reflect the cluster changes being made in the rule.

Several States remarked that 30 days is not enough to prepare a modified program description, Attorney General's Statement, Memorandum of Agreement, and other documentation as required by § 271.21(b)(1). Some States suggested that 90 days or more should be allowed for submittal of those documents. The States also pointed out that by clustering the Federal changes there will be many more changes contained in the

State revision packages than was envisioned when § 271.21(e)(4) was initially promulgated, and that therefore, additional time for submittal of the documents is appropriate. A number of States also suggested that they may in some cases have a couple of separate rulemaking actions over a year, and that they would prefer to prepare a single authorization application to cover all the changes.

The Agency agrees with the suggestions that the current regulations do not provide adequate time to submit the necessary documentation, and is therefore amending § 271.21(e)(4) to bring it into conformance with the cluster scheme. Under today's rule, after any State modification is completed the State must notify EPA of the change within 30 days. The State notification would typically include a copy of the program change (i.e., amended statute or regulation), and a letter indicating when the change takes effect and a proposed schedule for State submission of its authorization documents. This notification will allow the Agency to remain informed of State program changes and to know how they affect the authorized program. If EPA determines that the program modification is not in conformance with State authorization requirements, then the Agency may initiate program withdrawal proceedings.

Under today's rulemaking the State authorization documents would be due 60 days after the State modification cluster deadline, including any appropriate extensions. For example, if a State makes a non-HSWA change in March of 1987 for a cluster provision that is due on July 1, 1987, then the authorization application must be submitted by September 1, 1987 (60 days after the July 1 deadline). As another example, if a provision from the first HSWA cluster is adopted by a State, then the authorization documents must be submitted no later than September 1, 1989 (60 days after the July 1, 1989 HSWA cluster deadline). Of course, States may apply for authorization in advance of these dates if they prefer.

We feel that the 60-day period is a sufficient amount of time to submit the necessary documentation for States that complete their modifications near the deadline. Furthermore, we expect that many of the States will complete the cluster modifications prior to the deadlines, and will therefore have more than 60 days to develop the appropriate authorization documents. This approach will also allow States to submit a consolidated authorization application for EPA approval of all revisions within

a cluster rather than piecemeal applications. This approach will not only be a more efficient way to approve State revisions, it will also give EPA a more comprehensive view of the State's ability to modify its program to remain equivalent to the Federal program changes.

Although today's changes to § 271.21(e)(4) were not presented in the proposal, numerous commentors suggested that this provision be amended to reflect the clustering scheme. EPA believes that today's amendments are necessary to provide the flexibility and administrative simplicity that was intended by the clustering scheme.

#### 10. Revisions for Program Changes Occurring During the Authorization Process

As discussed earlier in this preamble, initial State authorization applications must, at a minimum, reflect the Federal requirements in effect 12 months prior to application submittal. (See § 271.3(f).) However, States are not precluded from seeking authorization for requirements taking effect less than 12 months prior to the State's submittal of its application. The Federal program changes that occur during this period that are not addressed in the State's initial application must subsequently be picked up in a State program revision along with any additional Federal requirements which occur during the final authorization approval process. These State modifications must be completed by the cluster deadlines in § 271.21(e) or by the date of final authorization, whichever is later. (See § 271.21(f).) Note that the six-month extension in § 271.21(e)(3) and the § 271.21(g) schedule of compliance may be applied to these deadlines when appropriate.

The proposal reorganized this requirement by moving it from § 271.21(e)(1)(iii) to § 271.21(f). The wording was also modified to conform to the cluster scheme. One commentor stated that some confusion might arise when comparing the operation of § 271.21(f) to § 271.3(f). In today's rule we have slightly modified § 271.21(f) by specifically exempting changes that a State has received authorization for under § 271.31(f) from the requirement to seek program modification.

#### 11. Effect of Cluster Rule on Recently Promulgated Tank Standards

Some questions have arisen regarding the operation of the cluster deadlines on the recently promulgated amendments to the RCRA standards for the storage and treatment of hazardous waste in tank systems (see 51 FR 25422-25486;

July 14, 1986). As discussed in the preamble to that rule, some of the provisions of the rule stem from HSWA, while other provisions are considered non-HSWA (see 51 FR 25463). This places the tank rule under two different clusters. Under today's cluster scheme, States will need to modify their programs to pick up the non-HSWA tank standards by July 1, 1988, and the HSWA tank standards by July 1, 1989 (if only State regulatory changes are needed). However, from a programmatic and administrative standpoint it would be much more practical for States to adopt both the HSWA and non-HSWA tank standards simultaneously. Therefore, EPA encourages State programs to adopt all program modifications with regard to these tank standards by the non-HSWA revision deadline (July 1, 1988), or sooner if possible.

#### C. Interim Authorization

##### 1. Expiration of HSWA Interim Authorization

Section 3006(c)(2) requires EPA to establish a deadline for the expiration of HSWA interim authorization. A State will need to obtain final authorization by that date for those requirements for which it holds HSWA interim authorization. Otherwise, the interim authorization portions of the State program will revert to EPA for implementation. Furthermore, the State's final authorization for the base RCRA program may be withdrawn by EPA if the State fails to revise its program to obtain final authorization by the deadlines in § 271.21. See § 271.22. The proposed rule provided that HSWA interim authorization expire July 1, 1991. This date was selected since it is the due date for State program modifications for the last scheduled HSWA self-implementing provision. (See the cluster discussion above.)

Four commentors suggested that the date be changed to July 1992 or beyond to allow sufficient time for States to make the necessary program changes. In consideration of the comments received and the changes to the HSWA cluster deadlines being promulgated today, the Agency has decided to change the proposed expiration date from July 1991 to January 1993. The Agency believes that the July 1991 date is inappropriate because it does not fully take into account the time allowed for State modifications for the second HSWA cluster. The deadline for State program modifications for the second HSWA cluster is July 1992 for the provisions requiring State statutory amendments, plus the Regional Administrator may

extend this deadline for an additional six months (January 1993) pursuant to § 271.21(e)(3). This could result in State modifications occurring as late as January 1993 without violating the revision deadlines for the second HSWA cluster. Therefore, the Agency has decided that HSWA interim authorization should expire on January 1, 1993, one and a half years later than the proposed date. To set a date earlier than January 1993 would needlessly risk authorization reversion and program disruption in those States that have interim authorization.

##### 2. Application Procedures for HSWA Interim Authorization

Section 271.24(b) of the proposal specified that the § 271.21(b) program revision procedures be used for approving State applications for HSWA interim authorization. The § 271.21(b) procedures are more abbreviated than those for initial submission of an authorization application, requiring submission of whatever documentation EPA determines to be necessary. State public hearings are not required prior to submission of the State's application. No comments were received on this provision. Section 271.24(b) is being promulgated in final form today without change from the proposal.

#### D. Administrative Compliance Order and Penalty Authorities

In the January 6 proposal, EPA requested comments on the concept of requiring States to have administrative compliance order and/or penalty authorities (see 51 FR 502). Several options were outlined and a series of questions were presented in order to assist in the careful analysis of the issue. The Agency received numerous responses on these authorization options. The Agency will take these comments into account as it considers proposing changes to the State authorization requirements. If such changes are proposed, a detailed analysis of the comments will be presented. If interested parties wish to submit additional comments or information, please see the January 6, 1986 Federal Register for a more detailed discussion of the issues and send comments to: David Levenstein, Office of Waste Programs Enforcement, 401 M Street, SW (WH-527), Washington, DC 20460.

#### IV. Response to Comments

The discussion section in today's rule gives EPA's reasons for accepting or rejecting many of the comments on the

proposed rule. The following are responses to the remaining comments.

Section 271.21(e)(2)(v) provides an additional year for States to modify their programs for any provision that necessitates a State statutory amendment. One commentor requested that EPA clarify whether the deadline for statutory amendments applies to every element in the cluster or only to the element that must be supported by statutory amendments. This provision only establishes a later deadline for the specific portion of the cluster that requires the statutory change, not for the entire cluster. For example, if a particular cluster is comprised of five EPA rulemakings and the State needs to amend its statute in order to be authorized for one of those rules, then the additional year is allowed for that one rule only; the remaining four rules must be picked up according to the normal cluster deadlines.

A few commentors asked for clarification as to whether States can be authorized for HSWA statutory provisions. These commentors expressed concern that if they waited for regulations to be adopted which incorporated the HSWA amendments, it would delay authorization. A State need not wait for implementing regulations to be promulgated by EPA, but may be authorized for any effective HSWA requirement, including those imposed by statute. Indeed, as discussed earlier, § 271.25 being promulgated today provides that authorized State programs be required to develop standards at least as stringent as the HSWA self-implementing requirements.

#### V. Effective Date

This rule will become effective immediately. Section 3010(b) of RCRA provides that requirements applicable to the generation, transportation, treatment, storage or disposal of hazardous waste become effective in six months. Since today's regulation is procedural, the requirements of section 3010(b) does not apply. There is good cause for making this rule effective immediately under the Administrative Procedures Act because this rule only affects the deadlines and procedures for States to revise their program.

#### VI. Regulatory Analysis

##### A. Regulatory Impact Analysis

Under Executive Order 12291 (46 FR 12193, February 19, 1981), EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. Today's regulation is not major because it will not result in an annual effect on the economy of \$100 million or more, nor will it result in an increase in costs or prices to industry. There will be no adverse impact on the ability of the U.S.-based enterprises to compete with foreign-based enterprises in domestic or export markets. The regulation merely modifies the procedures and deadlines for approving State RCRA program authorization applications and revisions. This rulemaking has been submitted to the Office of Management and Budget for Executive Order 12291 review.

##### B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, EPA is required to determine whether a regulation will have a significant impact on a substantial number of small entities so as to require a regulatory flexibility analysis. No regulatory flexibility analysis is required where the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

The amendments adopted here merely modify the procedures and deadlines for approving State hazardous waste program authorization applications and revisions and do not affect the compliance burdens of the regulated community. Therefore, pursuant to 5 U.S.C. 601(b), I certify that this regulation will not have a significant economic impact on a substantial number of small entities.

##### C. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*, EPA must estimate the paperwork burden created by any information collection request contained in a proposed or final rule. Because there are no information collection activities created by this

rulemaking, the requirements of the Paperwork Reduction Act do not apply.

Information collection requirements contained elsewhere in 40 CFR Part 271 have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act and have been assigned OMB control number 2050-0041.

##### List of Subjects in 40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: September 8, 1986.

Lee M. Thomas,  
Administrator.

For the reasons set out in the preamble, 40 CFR Part 271 is revised as follows:

#### PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

1. The authority citation for Part 271 continues to read as follows:

Authority: Secs. 1006, 2002(a), and 3006, Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended (42 U.S.C. 6905, 6912(a), and 6926).

2. Section 271.1 is amended by revising paragraph (j) to read as follows:

##### § 271.1 Purpose and scope.

(j) Requirements and prohibitions which are applicable to the generation, transportation, treatment, storage, or disposal of hazardous waste and which are imposed pursuant to the Hazardous and Solid Waste Amendments of 1984 (HSWA) include any requirement or prohibition which has taken effect under HSWA, such as:

- (1) All regulations specified in Table 1, and
- (2) The self-implementing statutory provisions specified in Table 2 that have taken effect.

Note.—See §§ 264.1(f)(3), 265.1(c)(4)(ii), 271.3(b), 271.21(e)(2) and 271.121(c)(3) for applicability.

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
Jan. 14, 1985	Dioxin-containing wastes	50 FR 1978-2006	July 15, 1985.
April 30, 1985	Paint filter liquids test	50 FR 18370-5	June 14, 1985.
July 15, 1985	Codification rule [as corrected in 51 FR 2702, 1/21/86]	50 FR 28702-55	July 15, 1985.
Oct. 23, 1985	Listing wastes from the production of dinitrotoluene, toluenediamine, and toluene diisocyanate	50 FR 42936-43	Oct. 23, 1985.
Nov. 29, 1985	Standards for the management of the burning of specific wastes in specific types of facilities	50 FR 49164-212	Dec. 9, 1985.
			March 31, 1986.
			May 29, 1986.
Dec. 31, 1985	Amendment of spent solvent listings to include solvent mixtures [as corrected in 51 FR 19176, 5/28/86]	50 FR 53315-20	Jan. 30, 1986.

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984—Continued

Promulgation date	Title of regulation	Federal Register reference	Effective date
Feb. 13, 1986	Listing wastes from the production of ethylene dibromide (EDB)	51 FR 5327-31	Aug. 13, 1986
Feb. 25, 1986	Listing of four spent solvents and the still bottoms from their recovery	51 FR 6537-42	Aug. 25, 1986
March 24, 1986	Regulations for generators of 100-1000 kg/mo of hazardous waste	51 FR 10146-76	Sept. 22, 1986
July 14, 1986	Hazardous Waste Tank Regulations: <sup>1</sup> 260.10; 262.34(a)(1); 264.110; 264.140; 264.190-264.199; 265.110; 265.140; 265.190-265.200; 270.14(b); 270.16; and 270.72 (e).	51 FR 25422-86	Jan. 12, 1987
Aug. 8, 1986	Exports of hazardous waste	51 FR 28684-86	March 24, 1987
			Nov. 8, 1986

<sup>1</sup> These regulations implement HSWA only to the extent that they apply to tank systems owned or operated by small quantity generators, establish leak detection requirements for all new underground tank systems, and establish permitting standards for underground tank systems that cannot be entered for inspection.

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	FEDERAL REGISTER reference
Nov. 8, 1984	Delisting procedures	3001(f)	July 15, 1985, 50 FR 28702-55
Do.	Waste disposal for small quantity generators prior to March 31, 1986	3001(d)(5)	Do.
Do.	Prohibition of disposal in salt domes, salt beds and underground mines and caves	3004(b)	Do.
Do.	Land disposal prohibition not applicable to contaminated soil or debris from a CERCLA response action or a RCRA corrective action prior to November 8, 1986	3004(d)(3)	Do.
Do.	Loss of interim status	3005(c)(2)(C) & (e)(2)-(3)	Do.
Do.	Storage of wastes prohibited from land disposal	3004(i) & 3005(j)(11)	Do.
Do.	Prohibition of waste and used oil as dust suppressant	3004(f)	Do.
Do.	Minimum technological requirements for new and expanding surface impoundments, landfills and incinerators	3004(o)	Do.
Do.	Ground water monitoring	3004(p)	Do.
Do.	Prohibition for burning fuels containing hazardous waste in any cement kilns	3004(q)(2)(C)	Do.
Do.	Financial responsibility for liability of guarantor when owner/operator is in bankruptcy	3004(t)(2)-(3)	Do.
Do.	Corrective action	3004(u)	Do.
Do.	Review of land disposal permits every 5 years	3005(c)(3)	Do.
Do.	Permit terms and conditions necessary to protect human health and the environment	3005(c)(3)	Do.
Do.	Research, development, and demonstration permits	3005(g)	Do.
Do.	Interim status facilities receiving waste after July 26, 1982	3005(i)	Do.
Do.	Deadline for surface impoundment retrofit exemption application	3005(j)(5)	Do.
Feb. 7, 1985	Fuel labeling requirements	3004(n)	Do.
May 8, 1985	Prohibition of liquids in landfills	3004(c)(1)	Do.
Do.	Expansions during interim status for waste piles	3015(a)	Do.
Do.	Expansions during interim status for landfills and surface impoundments	3015(b)	Do.
Do.	Interim control of hazardous waste disposed of by underground injection	7010(a)	Do.
Aug. 5, 1985	Small quantity generator manifest requirements	3001(d)(3)	Do.
Aug. 8, 1985	Exposure assessments to accompany landfill and surface impoundment permit applications	3019(a)	Do.
Sept. 1, 1985	Waste minimization certification on manifest	3002(b)	Do.
Do.	Waste minimization permit condition	3005(h)	Do.
Nov. 8, 1985	Prohibition of non-hazardous liquids in landfills	3004(c)(3)	Do.
Do.	Notification of hazardous waste export	3017(c)	Do.
Feb. 8, 1986 <sup>1</sup>	Notification requirements for producers, burners, blenders, distributors and marketers of waste derived fuel	3010(a)	Nov. 29, 1985, 50 FR 49164-211
Mar. 31, 1986 <sup>2</sup>	Small quantity generator requirements	3001(d)(8)	Mar. 24, 1986, 51 FR 10146-78
Nov. 8, 1986	Land disposal prohibitions on dioxins and F001-F005 solvents	3004(e)	Do.
Do.	Temporary granting of exclusion petitions ceases	3001(f)(2)(B)	Do.
Do.	Export of hazardous waste	3017(e)	Do.
July 8, 1987	Land disposal ban on "California" waste	3004(d)	Aug. 8, 1986, 51 FR 28684-86
Aug. 8, 1988	Prohibition on California wastes, dioxins, and solvents in deep injection wells	3004(f)(3)	Do.
Do.	Land disposal prohibition of 1/2 of listed wastes	3004(g)(6)(A)	Do.
Nov. 8, 1988	Prohibition on wastes in existing surface impoundments unless double lined	3005(j)	Do.
June 8, 1989	Prohibition on land disposal of 1/2 of listed wastes	3004(g)(6)(B)	Do.
May 8, 1990	Prohibition on land disposal of all listed wastes	3004(g)(6)(C)	Do.

<sup>1</sup> Note that the effective date was changed to Jan. 29, 1986 by the Nov. 29, 1985 rule.

<sup>2</sup> Note that the effective date was changed to Sept. 22, 1986 by the Mar. 24, 1986 rule.

3. Section 271.3 is amended by redesignating paragraphs (a) through (d) as (b) through (e) and by adding new paragraphs (a) and (f) as follows. Newly redesignated paragraph (d) is amended by changing the reference now reading "paragraph (b) of this section" to read "paragraph (c) of this section".

#### § 271.3 Availability of final authorization.

(a) Where a State program meets the requirements of section 3006 of RCRA and this subpart it may receive authorization for any provision of its program corresponding to a Federal provision in effect on the date of the State's authorization.

(f) Official State applications for final authorization may be reviewed on the basis of Federal self-implementing statutory provisions that were in effect 12 months prior to the State's submission of its official application (if no implementing regulations have previously been promulgated) and the regulations in 40 CFR Parts 124, 260-266, 268, 270 and 271 that were in effect 12 months prior to the State's submission of its official application. To meet this requirement the State may demonstrate that its program qualifies for final authorization pursuant to this subpart or interim authorization under § 271.24. States are not precluded from seeking authorization for requirements taking

effect less than 12 months prior to the State's submittal of its final application.

4. Section 271.9 is revised to read as follows:

#### § 271.9 Requirements for identification and listing of hazardous wastes.

(a) The State program must control all the hazardous wastes controlled under 40 CFR Part 261 and must adopt a list of characteristics for identifying hazardous wastes equivalent to those under 40 CFR Part 261.

(b) The State is not required to have a delisting mechanism. A State may receive authorization for delisting if the State regulations for delisting decisions

are equivalent to § 260.20(b) and § 260.22, and the State provides public notice and opportunity for comment before granting or denying delisting requests.

5. Section 271.10 is amended by adding new paragraph (i) as follows:

**§ 271.10 Requirements for generators of hazardous waste.**

(i) Unless otherwise provided in Part 271, the State program shall have standards for generators which are at least as stringent as any amendment to 40 CFR Part 262 which is promulgated after July 1, 1984.

6. Section 271.11 is amended by adding new paragraph (e) as follows:

**§ 271.11 Requirements for transporters of hazardous wastes.**

(e) Unless otherwise provided in Part 271, the State program shall have standards for transporters which are at least as stringent as any amendment to 40 CFR Part 263 which is promulgated after July 1, 1984.

7. Section 271.13 is amended by revising paragraph (a) to read as follows:

**§ 271.13 Requirements with respect to permits and permit applications.**

(a) State law must require permits for owners and operators of all hazardous waste management facilities required to obtain a permit under 40 CFR Part 270 and prohibit the operation of any hazardous waste management facility without such a permit, except that States may, if adequate legal authority exists, authorize owners and operators of any facility which would qualify for interim status under the Federal program to remain in operation until a final decision is made on the permit application, or until interim status terminates pursuant to 40 CFR 270.73(b) through (f). When State law authorizes such continued operation it shall require compliance by owners and operators of such facilities with standards at least as stringent as EPA's interim status standards at 40 CFR Part 265.

8. Section 271.17(c) is revised to read as follows:

**§ 271.17 Sharing of Information.**

(c) (1) The State program must provide for the public availability of information obtained by the State regarding facilities and sites for the treatment, storage, and disposal of hazardous waste. Such information must be made available to the public in substantially the same manner, and to the same degree, as

would be the case if the Administrator was carrying out the provisions of Subtitle C of RCRA in the State.

(2) A State must revise its program to comply with this section in accordance with § 271.21(e)(2)(ii). Interim authorization under § 271.24 is not available to demonstrate compliance with this section.

9. Section 271.21 is amended by revising paragraph (e) and adding paragraphs (f) and (g) to read as follows:

**§ 271.21 Procedures for revision of State programs.**

(e) (1) As the Federal program changes, authorized State programs must be revised to remain in compliance with this subpart.

(2) Federal program changes are defined for purposes of this section as promulgated amendments to 40 CFR Parts 124, 270, 260-266, or 268 and any self-implementing statutory provisions (i.e., those taking effect without prior implementing regulations) which are listed as State program requirements in this subpart. States must modify their programs to reflect Federal program changes and must subsequently submit the modifications to EPA for approval.

(i) For Federal program changes occurring before July 1, 1984, the State program must be modified within one year of the date of the Federal program change.

(ii) Except as provided in paragraph (e) (iii) and (iv) of this section, for Federal program changes occurring on or after July 1, 1984, the State program must be modified by July 1 of each year to reflect all changes to the Federal program occurring during the 12 months preceding the previous July 1. (For example, States must modify their programs by July 1, 1986 to reflect all changes from July 1, 1984 to June 30, 1985.)

(iii) For Federal program changes identified in § 271.1(j) that occur between November 8, 1984 and June 30, 1987 (inclusive), the State program must be modified by July 1, 1989.

(iv) For Federal program changes identified in § 271.1(j) that occur between July 1, 1987 and June 30, 1990 (inclusive), the State program must be modified by July 1, 1991.

(v) States may have an additional year to modify their programs for those changes to the Federal program identified in paragraphs (e) (i), (ii), (iii), and (iv) of this section which necessitate a State statutory amendment.

(3) The deadlines in paragraphs (e)(2)(i) through (v) may be extended by the Regional Administrator upon an adequate demonstration by a State that

it has made a good faith effort to meet these deadlines and that its legislative or rulemaking procedures render the State unable to do so. No such extension shall exceed six months.

(4) (i) Within 30 days of the completion of the State program modification the State must submit to EPA a copy of the program change and a schedule indicating when the State intends to seek approval of the change. Such schedule shall not exceed the dates provided for in paragraph (e)(4)(ii).

(ii) Within 60 days of the appropriate deadline in paragraphs (e), (f), and (g) of this section, the State must submit to EPA the documentation described in paragraph (b) of this section to revise its program.

(f) A State must modify its program to comply with any Federal program changes which occur prior to the day that final authorization is received, except for those changes that the State has already received authorization for pursuant to § 271.3(f). Such State program modifications must be completed and submitted by the deadlines specified in paragraph (e) of this section or by the date of final authorization, whichever is later.

(g) (1) States that are unable to modify their programs by the deadlines in paragraph (e) may be placed on a schedule of compliance to adopt the program revision(s) provided that:

(i) The State has received an extension of the program modification deadline under paragraph (e)(3) and has made diligent efforts to revise its program during that period of time,

(ii) The State has made progress in adopting the program modifications,

(iii) The State submits a proposed timetable for the requisite regulatory and/or statutory revisions by the deadline granted under paragraph (e)(3),

(iv) The schedule of compliance for program revisions does not exceed one year from the extended program modification deadline under paragraph (e)(3), and

(v) The schedule of compliance is published in the Federal Register.

(2) If a State fails to comply with the schedule of compliance, the Administrator may initiate program withdrawal procedures pursuant to §§ 271.22 and 271.23.

10. Section 271.24 is revised to read as follows:

**§ 271.24 Interim authorization under section 3006(g) of RCRA.**

(a) Any State which is applying for or has been granted final authorization pursuant to section 3006(b) of RCRA

may submit to the Administrator evidence that its program contains (or has been amended to include) any requirement which is substantially equivalent to a requirement identified in § 271.1(j) of this chapter. Such a State may request interim authorization under section 3006(g) of RCRA to carry out the State requirement in lieu of the Administrator carrying out the Federal requirement.

(b) The applications shall be governed by the procedures for program revisions in § 271.21(b) of this chapter.

(c) Interim authorization pursuant to this section expires on January 1, 1993.

11. Part 271 is amended by adding a new § 271.25 to Subpart A to read as follows:

**§ 271.25 HSWA requirements.**

Unless otherwise provided in Part 271, the State program shall have standards

at least as stringent as the requirements and prohibitions that have taken effect under the Hazardous and Solid Waste Amendments of 1984 (HSWA).

**§ 271.121 [Amended]**

12. In § 271.121 paragraph (1) is redesignated as paragraph (i).

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