This document is scheduled to be published in the Federal Register on 2026-11-27 and available online at https://www.federalregister.gov/d/2026-24099, and on https://govinfo.gov

[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2026-13834; Project Identifier AD-2026-00148-E]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain General Electric Company (GE) Model GE90-110B1 and GE90-115B engines. This proposed AD was prompted by a report of an aborted takeoff due to left engine failure caused by liberation of the interstage high-pressure turbine (HPT) rotor seal rim. This proposed AD would require determining the recalculated service life of the interstage HPT rotor seal and, depending on the results, replacing the interstage HPT rotor seal with a part eligible for installation. For certain engine populations, as an alternative to replacing the interstage HPT rotor seal, this proposed AD would require initial and repetitive ultrasonic inspections of the interstage HPT rotor seal for cracks and, depending on the results, removing the interstage HPT rotor seal from service. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to regulations.gov. Follow the instructions for submitting comments.

• Fax: (202) 493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at regulations.gov under Docket No. FAA-2026-13834; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

• For GE material identified in this proposed AD, contact the General Electric Company, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ge.com; website: ge.com.

• You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

FOR FURTHER INFORMATION CONTACT: Molly Sturgis, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (562) 627-5373; email: molly.a.sturgis@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments using a method listed under the ADDRESSES section. Include “Docket No. FAA-2026-13834; Project Identifier AD-2026-00148-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may revise this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal

information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Molly Sturgis, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

On October 19, 2019, a Boeing Model 777 airplane powered by GE Model GE90-115B engines experienced an engine failure that resulted in an aborted takeoff. A manufacturer investigation revealed that the engine failure was caused by rim liberation of the interstage HPT rotor seal. Additional root cause analysis revealed that the rim liberation was the result of high cycle fatigue cracks that initiated at the interstage seal web holes due to atypical intermittent operating conditions with short durations. As a result, the FAA issued Emergency AD 2019-21-51, Amendment 39-19798 (84 FR 64195, November 21, 2019) for certain GE GE90-115B model turbofan engines; Emergency AD 2020-01-55, Amendment 39-19838 (85 FR 8386, February 14, 2020) for certain GE GE90-110B1 and GE90-115B model turbofan engines; AD 2020-10-04, Amendment 39-21122 (85 FR 27909, May 12, 2020) for all GE GE90-110B1 and GE90-115B model turbofan engines with a certain interstage HPT rotor seal installed; and AD 2024-06-15, Amendment 39-22720 (89 FR 33215, April 29, 2024; corrected May 13, 2024 (89 FR 41304)) for certain GE Model GE90-110B1 and GE90-115B engines to remove affected

parts from engines that had accumulated high flight cycles (FCs). Since the FAA issued those ADs, the affected engines have continued to accumulate FCs, and the manufacturer has published service material with revised instructions for calculating removal thresholds for the interstage HPT rotor seal. This condition, if not addressed, could result in release of high-energy debris, damage to the engine, damage to the airplane, and possible loss of the airplane.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design. The NPRM would not affect the ADs referenced above and all of those ADs remain in effect.

Material Incorporated by Reference Under 1 CFR Part 51

The FAA reviewed GE GE90-100 Service Bulletin 72-0925 R00, dated November 21, 2025, which specifies procedures for determining the recalculated service life of the interstage HPT rotor seal, and removal thresholds for the interstage HPT rotor seal. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Proposed AD Requirements in this NPRM

This proposed AD would require determining the recalculated service life of the interstage HPT rotor seal and, depending on the results, replacing the interstage HPT rotor seal with a part eligible for installation. For certain engine populations, as an alternative to replacing the interstage HPT rotor seal, this proposed AD would require initial and repetitive ultrasonic inspections of the interstage HPT rotor seal for cracks and, depending on the results, removing the interstage HPT rotor seal from service.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 339 engines installed on airplanes of U.S. registry. The estimated cost listed in the table below for replacement of the interstage HPT rotor seal is for engines that are likely to be

impacted by early part removals. The FAA estimates this number to be 10 percent of the entire fleet (34 engines).

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Replacement of interstage HPT rotor seal (34 engines)	100 work-hours x $85 per hour = $8,500	$742,900	$751,400	$25,547,600
Ultrasonic inspection of interstage HPT rotor seal	2 work-hours x $85 per hour = $170	$0	$170	$57,630

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

General Electric Company: Docket No. FAA-2026-13834; Project Identifier AD-2026-00148-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all General Electric Company (GE) Model GE90-110B1 and GE90-115B engines with an installed interstage high-pressure turbine (HPT) rotor seal having part number (P/N) 1865M18P04, 2047M23P01, 2087M22P02, 2087M22P03, 2448M33P01, 2502M00P01, 2502M00P02, 2505M72P01, or 2505M72P02.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by a report of an aborted takeoff due to left engine failure caused by liberation of the interstage HPT rotor seal rim. The FAA is issuing this AD to prevent failure of the HPT. The unsafe condition, if not addressed, could result in release of high-energy debris, damage to the engine, damage to the airplane, and possible loss of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Definitions

For the purpose of this AD:

(1) A "part eligible for installation" is any serviceable interstage HPT rotor seal that has not been removed from service as a result of the actions required by paragraph (h) of this AD.

(2) A "SM4L5 cycle" is a unique operational characteristic that drives conditions that can lead to excitation and resonance of the interstage HPT rotor seal. The elements of an SM4L5 cycle are short turnaround time between shutdown and start, short ground idle time during taxi (before shutdown), and hotter than nominal ambient conditions.

Note 1 to paragraph (g)(2): Guidance for calculation of an SM4L5 cycle may be found in Appendix C of GE GE90-100 Service Bulletin (SB) 72-0925 R00, dated November 21, 2025 (GE GE90-100 Service Bulletin 72-0925 R00).

(3) The "1/SM4L5 accumulation rate" is the part cycles since new (PCSN) divided by the SM4L5 count (Total) cycle.

(4) The "fast SM4L5 population" are interstage HPT rotor seals with a 1/SM4L5 accumulation rate that is less than or equal to 45.

(5) The "medium SM4L5 population" are interstage HPT rotor seals with a 1/SM4L5 accumulation rate that is greater than 45 and a 1/SM4L5 accumulation rate that is less than 160.

(6) The "slow SM4L5 population" are interstage HPT rotor seals with a 1/SM4L5 accumulation rate that is greater than or equal to 160. Parts with an SM4L5 count (Total) that is equal to 0 are classified in the slow SM4L5 population.

(7) The “SM4L5 count (Baseline) cycles” are the historical count of SM4L5 cycles accumulated by a specific interstage HPT rotor seal that is currently installed in an engine or previously operated in an engine calculated up to June 17, 2025.

(8) The “SM4L5 count (Total) cycles” are the combined count of SM4 and L5 cycles accumulated by an interstage HPT rotor seal during its entire operation, starting from 0 PCSN to the date of review. This includes all SM4L5 exposures from multiple engines with which the interstage HPT rotor seal was associated during its service life.

(h) Required Actions

(1) Within 30 days after the effective date of this AD, determine the SM4L5 count (Baseline), SM4L5 count (Total) cycles, 1/SM4L5 accumulation rate, and SM4L5 population (fast, medium, or slow) of the interstage HPT rotor seal in accordance with Step 3.A.(2) through (4) of the Accomplishment Instructions of GE GE90-100 SB 72-0925 R00.

(2) For fast and medium SM4L5 accumulation population interstage HPT rotor seals, perform the part removal in accordance with paragraph (h)(2)(i) of this AD or perform the inspections and part removal in accordance with paragraphs (h)(2)(ii) and (h)(2)(iii) of this AD.

(i) Before accumulating 150 SM4L5 count (Total) cycles or before accumulating 9,000 PCSN, whichever occurs first after the effective date of this AD, remove the interstage HPT rotor seal from service and replace with a part eligible for installation; or

(ii) Perform initial and repetitive ultrasonic inspections of the HPT rotor seal and remove any interstage HPT rotor seal with a non-serviceable ultrasonic inspection indication within the compliance times specified in, and in accordance with, Step 3.A.(8) of the Accomplishment Instructions of GE GE90-100 SB 72-0925 R00; and

(iii) Before accumulating 200 SM4L5 count (Total) cycles or before accumulating 9,000 PCSN, whichever occurs first after the effective date of this AD, remove the interstage HPT rotor seal from service and replace with a part eligible for installation.

(3) For slow SM4L5 accumulation population interstage HPT rotor seals or for interstage HPT rotor seals that are determined to be in the slow SM4L5 accumulation population after accumulating 9,000 PCSN, before accumulating 150 SM4L5 count

(Total) cycles, remove the interstage HPT rotor seal from service and replace with a part eligible for installation.

(i) Terminating Action

Installation of an HPT rotor seal that does not have a P/N identified in paragraph (c) of this AD constitutes terminating action for all the requirements of paragraph (h) of this AD.

(j) No Reporting Requirement

Where GE GE90-100 SB 72-0925 R00 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(k) Alternative Methods of Compliance (AMOCs)

The Manager, AIR-520 Continued Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (l) of this AD and email to: AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Additional Information

For more information about this AD, contact Molly Sturgis, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (562) 627-5373; email: molly.a.sturgis@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the material listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this material as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) GE GE90-100 Service Bulletin 72-0925 R00, dated February 3, 2026.

(ii) [Reserved]

(3) For GE material identified in this AD, contact the General Electric Company, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ge.com; website: ge.com.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on November 24, 2026.

Lona C. Saccomando,
Acting Deputy Director, Integrated Certificate Management Division,
Aircraft Certification Service.

[FR Doc. 2026-24099 Filed: 11/25/2026 8:45 am; Publication Date: 11/27/2026]