[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2025-1364; Project Identifier AD-2024-00613-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 GE90-90B, GE90-94B, GE90-110B1, and GE90-115B engines. This proposed AD was prompted by a manufacturer investigation that revealed certain high-pressure turbine (HPT) stage 1 and HPT stage 2 disks were manufactured from powder metal material suspected to contain iron inclusion. This proposed AD would require replacement of affected HPT stage 1 and HPT stage 2 disks with parts eligible for installation. 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-2025-1364; 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 GE, 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: Alexei Marqueen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7178; email: alexei.t.marqueen@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-2025-1364; Project Identifier AD-2024-00613-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 Alexei Marqueen, 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

The FAA was notified by the manufacturer of the detection of iron inclusion in a turbine disk manufactured from the same powder metal material used to manufacture certain HPT stage 1 and HPT stage 2 disks for GE Model GE90-90B, GE90-94B, GE90-110B1, and GE90-115B engines. Further investigation by the manufacturer determined that the iron inclusion is attributed to deficiencies in the manufacturing process and may cause reduced material properties and a lower fatigue life capability, which may result in premature fracture and uncontained failure. The manufacturer also informed the FAA that additional risk assessments determined that there were no incidents of premature fracture and uncontained failure associated with the discovery of this iron inclusion material on these engines but concluded that replacement of the affected HPT stage 1 and HPT stage 2 disks is necessary to prevent any future failure events. The exposure of HPT stage 1 and HPT stage 2 disks to iron inclusion, if not addressed, could result in uncontained debris release, damage to the engine, and damage to 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.

Material Incorporated by Reference Under 1 CFR Part 51

The FAA reviewed GE GE90-100 Service Bulletin (SB) 72-0926, Revision 01, dated December 22, 2023 (GE GE90-100 SB 72-0926, Revision 01). This material specifies the affected part numbers, serial numbers, and cyclic removal thresholds for the HPT stage 1 and HPT stage 2 disks. 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 replacement of certain HPT stage 1 disks and HPT stage 2 disks with parts eligible for installation. Table 1 to paragraph (c) of this AD includes all part numbers and serial numbers for affected HPT stage 1 disks that have been scrapped or that have already been removed from GE Model GE90-90B and GE90-94B engines, and certain part numbers and serial numbers for affected HPT stage 1 disks and HPT stage 2 disks that have been scrapped or that have already been removed from GE Model GE90-110B1 and GE90-115B engines. GE GE90 SB 72-1229, dated October 11, 2023, includes these part numbers and serial numbers. Therefore, the part numbers and serial numbers for affected HPT stage 1 disks listed in table 1 to paragraph (c) of this AD take precedence over those listed in GE GE90 SB 72-1229, dated October 11, 2023.

Differences Between this Proposed AD and the Referenced Material

GE GE90-100 SB 72-0926, Revision 01 includes cyclic removal thresholds for certain parts that have already been removed or scrapped while this proposed AD requires those parts to be removed from service and replaced before further flight.

GE GE90-100 SB 72-0926, Revision 01 uses the term "high pressure turbine rotor (HPTR)," while this proposed AD uses the term "high pressure turbine (HPT)."

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect two engines installed on airplanes of U.S. registry. The FAA estimates that one engine installed on an airplane of U.S. registry would require replacement of the HPT stage 1 disk, and one engine installed on an airplane of U.S. registry would require replacement of the HPT stage 2 disk. 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
Replace HPT stage 1 disk	8 work-hours x $85 per hour = $680	$932,136 (prorated)	$932,816	$932,816
Replace HPT stage 2 disk	8 work-hours x $85 per hour = $680	$186,406 (prorated)	$187,086	$187,086

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-2025-1364; Project Identifier AD-2024-00613-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 the following General Electric Company (GE) Model engines:

(1) GE90-90B and GE90-94B engines with a high pressure turbine (HPT) stage 1 disk having a part number and serial number identified in table 1 to paragraph (c) of this AD installed; and

(2) GE90-110B1 and GE90-115B engines with an HPT stage 1 disk or HPT stage 2 disk having a part number and serial number identified in table 1 to paragraph (c) of this AD or Table 1 or Table 2 of GE GE90-100 Service Bulletin 72-0926, Revision 01, dated December 22, 2023 (GE GE90-100 SB 72-0926, Revision 01) installed.

Table 1 to Paragraph (c) - Affected HPT Stage 1 and 2 Disks

Part Name	Part Number	Serial Number
HPT Stage 1 Disk	1847M95G01	GWN05K5J
HPT Stage 1 Disk	1847M95G01	GWN05K5M
HPT Stage 1 Disk	1847M95G01	GWN05NP6
HPT Stage 1 Disk	1865M13G08	GWN10N9A
HPT Stage 1 Disk	1865M13G08	GWN0NJ92
HPT Stage 1 Disk	1865M13G08	GWN0NJ94
HPT Stage 1 Disk	1865M13G08	GWN0NK87
HPT Stage 1 Disk	1865M13G08	GWN0RJ4G
HPT Stage 1 Disk	1865M13G08	GWN0WPEC
HPT Stage 2 Disk	1865M14P04	TMT4RK67
HPT Stage 2 Disk	1865M14P04	TMT4RG10
HPT Stage 2 Disk	1865M14P04	TMT4RG11

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a manufacturer investigation that revealed certain HPT stage 1 disks and HPT stage 2 disks were manufactured from powder metal material suspected to contain iron inclusion. The FAA is issuing this AD to prevent premature fracture and uncontained failure of the HPT stage 1 disks and HPT stage 2 disks. The unsafe condition, if not addressed, could result in uncontained debris release, damage to the engine, and damage to the airplane.

(f) Compliance

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

(g) Required Actions

At the applicable times specified in paragraphs (g)(1) through (3) of this AD, remove each affected HPT stage 1 disk and HPT stage 2 disk from service and replace with a part eligible for installation.

(1) For HPT stage 1 disks and HPT stage 2 disks with a part number and serial number identified in table 1 to paragraph (c) of this AD, before further flight.

(2) For HPT stage 1 disks with a part number and serial number identified in Table 1 of GE GE90-100 SB 72-0926, Revision 01, that are not identified in table 1 to paragraph (c) of this AD, at the next piece-part exposure or before exceeding 4,650 cycles since new (CSN), whichever occurs first.

(3) For HPT stage 2 disks with a part number and serial number identified in Table 2 of GE GE90-100 SB 72-0926, Revision 01, that are not identified in table 1 to paragraph (c) of this AD, at the next piece-part exposure or before exceeding 11,300 CSN, whichever occurs first.

(h) Grace Period for HPT Stage 1 Disk Replacement

For affected HPT stage 1 disks having greater than 4,650 CSN on the effective date of this AD, the replacement required by paragraph (g)(2) of this AD may be deferred up to 50 flight cycles after the effective date of this AD.

(i) Definitions

(1) For the purpose of this AD, a "part eligible for installation" is any HPT stage 1 disk or HPT stage 2 disk having a part number and serial number that is not identified in table 1 to paragraph (c) of this AD or Table 1 or Table 2 of GE GE90-100 SB 72-0926, Revision 01.

(2) For the purpose of this AD, a "piece-part exposure" is when the affected HPT stage 1 disk or HPT stage 2 disk is removed from the engine and completely disassembled.

(j) Alternative Methods of Compliance (AMOCs)

(1) 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 AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (k) 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.

(k) Additional Information

For more information about this AD, contact Alexei Marqueen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7178; email: alexei.t.marqueen@faa.gov.

(l) 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 72-0926, Revision 01, dated December 22, 2023.

(ii) [Reserved]

(3) For GE material identified in this AD, contact 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 July 25, 2025.

Peter A. White,
Deputy Director, Integrated Certificate Management Division,
Aircraft Certification Service.

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