



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2025-0015; Project Identifier AD-2024-00615-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 GENx-1B64, GENx-1B64/P1, GENx-1B64/P2, GENx-1B67, GENx-1B67/P1, GENx-1B67/P2, GENx-1B70, GENx-1B70/75/P1, GENx-1B70/75/P2, GENx-1B70/P1, GENx-1B70/P2, GENx-1B70C/P1, GENx-1B70C/P2, GENx-1B74/75/P1, GENx-1B74/75/P2, GENx-1B76/P2, GENx-1B76A/P2, and GENx-2B67/P 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](https://www.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-2025-0015; 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 to an address listed under the ADDRESSES section. Include “Docket No. FAA-2025-0015; Project Identifier AD-2024-00615-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 GENx-1B64, GENx-1B64/P1, GENx-1B64/P2, GENx-1B67, GENx-1B67/P1, GENx-1B67/P2, GENx-1B70, GENx-1B70/75/P1, GENx-1B70/75/P2, GENx-1B70/P1, GENx-1B70/P2, GENx-1B70C/P1, GENx-1B70C/P2, GENx-1B74/75/P1, GENx-1B74/75/P2, GENx-1B76/P2, GENx-1B76A/P2, and GENx-2B67/P 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 failed events 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 failed 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 GENx-1B Service Bulletin 72-0542 R00, dated April 15, 2024 (GE GENx-1B SB 72-0542 R00). The FAA also reviewed GE GENx-2B Service Bulletin 72-0471 R00, dated April 15, 2024. 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. Depending on the part numbers and serial numbers of the affected HPT stage 1 disks and HPT stage 2 disks, this NPRM proposes to require these actions to be accomplished at the next piece-part exposure after the effective date of this proposed AD or before the affected HPT stage 1 disks and HPT stage 2 disks reach the cyclic removal threshold of up to 10,100 cycles since new.

Differences Between this Proposed AD and the Referenced Material

GE GENx-1B SB 72-0542 R00 uses the terms "HPT rotor stage 1 disk" and "HPT rotor stage 2 disk," while this proposed AD uses the terms "HPT stage 1 disk" and "HPT stage 2 disk."

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect one engine installed on an airplane of U.S. registry. The FAA estimates that no engines installed on airplanes 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	\$757,416 (prorated)	\$758,096	\$758,096
Replace HPT stage 2 disk	8 work-hours x \$85 per hour = \$680	\$278,101 (prorated)	\$278,781	\$0

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-2025-0015; Project Identifier AD-2024-00615-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 General Electric Company Model GENx-1B64, GENx-1B64/P1, GENx-1B64/P2, GENx-1B67, GENx-1B67/P1, GENx-1B67/P2, GENx-1B70, GENx-1B70/75/P1, GENx-1B70/75/P2, GENx-1B70/P1, GENx-1B70/P2, GENx-1B70C/P1, GENx-1B70C/P2, GENx-1B74/75/P1, GENx-1B74/75/P2, GENx-1B76/P2, GENx-1B76A/P2, and GENx-2B67/P engines with at least one of the following installed:

(1) High Pressure Turbine (HPT) stage 1 disk having part number (P/N) 2383M83G03 and a serial number (S/N) listed in Table 1 of GE GENx-1B Service Bulletin 72-0542 R00, dated April 15, 2024 (GE GENx-1B SB 72-0542 R00);

(2) HPT stage 2 disk having P/N 2300M84P02 and a S/N listed in Table 2 of GE GENx-1B SB 72-0542 R00;

(3) HPT stage 1 disk having P/N 2383M83G03 and a S/N listed in Table 1 of GE GEnx-2B Service Bulletin 72-0471 R00, dated April 15, 2024 (GE GEnx-2B SB 72-0471 R00); or

(4) HPT stage 2 disk having P/N 2300M84P02 and a S/N listed in Table 2 of GE GEnx-2B SB 72-0471 R00.

(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. 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 time specified in paragraphs (g)(1) through (4) 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 engines identified in paragraph (c)(1) of this AD, at the next piece-part exposure after the effective date of this AD or before the affected HPT stage 1 disk exceeds the cyclic removal threshold listed in Table 1 of GE GEnx-1B SB 72-0542 R00, whichever occurs first.

(2) For engines identified in paragraph (c)(2) of this AD, at the next piece-part exposure after the effective date of this AD or before the affected HPT stage 2 disk exceeds the cyclic removal threshold listed in Table 2 of GE GEnx-1B SB 72-0542 R00, whichever occurs first.

(3) For engines identified in paragraph (c)(3) of this AD, at the next piece-part exposure after the effective date of this AD or before the affected HPT stage 1 disk

exceeds the cyclic removal threshold listed in Table 1 of GE GENx-2B SB 72-0471 R00, whichever occurs first.

(4) For engines identified in paragraph (c)(4) of this AD, at the next piece-part exposure after the effective date of this AD or before the affected HPT stage 2 disk exceeds the cyclic removal threshold listed in Table 2 of GE GENx-2B SB 72-0471 R00, whichever occurs first.

(h) Definitions

For the purpose of this AD:

(1) A “part eligible for installation” is any HPT stage 1 disk or HPT stage 2 disk with a P/N and S/N that is not listed in Table 1 or Table 2 of either GENx-1B SB 72-0542 R00 or GENx-2B SB 72-0471 R00.

(2) A “piece-part exposure” is when the affected HPT stage 1 disk or HPT stage 2 disk is removed from the engine.

(i) 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 (j) of this AD and email to:

AMOC@faa.gov.

(2) 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.

(j) 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.

(k) 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 GENx-1B Service Bulletin (SB) 72-0542 R00, dated April 15, 2024.

(ii) GE GENx-2B SB 72-0471 R00, dated April 15, 2024.

(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 January 27, 2025.

Suzanne Masterson,
Deputy Director, Integrated Certificate Management Division,
Aircraft Certification Service.

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