

any one flight. The commenter noted that the lack of a specific limit in the proposed definitions leaves the issue ambiguous. The commenter also noted that a number of a specific limit in the proposed definitions leaves the issue ambiguous. The commenter also noted that a number of people at the public meeting expressed differing views on the intended maximum number of allowable applications of 30-second OEI or 2-minute OEI power on a single flight.

The FAA agrees. The rated 30-second OEI power and rated 2-minute OEI power for section 1.1 are therefore revised to limit the use of these new power levels to a maximum of three periods. The definitions retain requirements of mandatory inspection and prescribed maintenance following any use of 30-second OEI or 2-minute OEI power, and the limit of use of these new power levels to continue operation, in order to complete the flight during which engine failure occurred.

#### *Section 33.27 Turbine, Compressor, Fan, and Turbosupercharger Rotors*

One commenter states that post-test acceptance criteria after the overspeed test for the 30-second OEI rating should be less severe since a mandatory inspection of the engine will be required after the engine is used at the 30-second OEI rating. The commenter suggests that since the inspection would result in replacement of parts unsuitable for continuous use, more specific acceptable criteria are not considered practical in view of the wide variety of designs in use and yet to come. The commenter also suggests that the last paragraph of § 33.27(c) be changed as follows:

Following the testing, each rotor must be within approved dimensional limits for an overspeed condition and may not be cracked; except that following the test based on the 30-second OEI rating condition, growth and distress beyond the dimensional limits for an overspeed condition and cracks will be permitted, provided there is no evidence of imminent failure. The applicant may show by analysis or test, as found necessary by the Administrator, that there is no evidence of imminent failure.

Another commenter suggests that the severity of the rotor test requirement needs to be clearly specified, consistent with the worst case rationale identified in the NPRM. The commenter suggests that the second paragraph of § 33.27(c) should be extended by the addition of the following: “\* \* \* including two subsequent uses of both 30-second OEI and 2-minute OEI conditions.”

The FAA does not agree that section 33.27 should be revised as the

commenters suggested. The FAA would require that, based on the condition of the rotor following the test, the engine would have sufficient safety margin for continued operation and the capability of completing up to three uses of both 30-second OEI power and 2-minute OEI power. It is inappropriate to specify in the rule that all cracks would be acceptable, since a rotor with cracks may not be in airworthy condition in all engines affected by the rule. The same argument applies concerning the “dimensional” and “imminent failure” statements. The standard that growth and distress beyond the limits for an overspeed condition will be permitted provided the engine is shown by analysis or test, as found necessary by the Administrator, that the structural integrity of each rotor is maintained will permit the FAA to apply the best engineering judgment for each specific engine type design tested. Therefore, the FAA proposes to revise the paragraph at the end of section 33.27(c) by incorporating that standard; the revised paragraph is proposed as a new paragraph (d) to section 33.27. In addition to these revisions other editorial changes have been made in the proposed § 33.27.

#### *Section 33.29 Instrument Connection*

One commenter states that Proposal No. 6 of the NPRM corresponds to only one of the two aspects covered by Proposal No. 11 for § 29.1305 in Notice No. 89–26. The commenter states that it corresponds only with § 29.1305(a)(25), whereas, it should also be concerned with § 29.1305(a)(24) because the engine manufacturer will need to provide some means, incorporated in the engine, in order to enable the complete helicopter to comply with both of these two part 29 sections. Therefore, the engine certification standards must address all issues that could be considered as engine requirements.

The FAA agrees. The proposed section 33.29 is changed to require a provision for a means to alert the pilot when the engine is at the 30-second OEI and 2-minute OEI levels; and is reorganized. The proposed section 33.29(c)(1) corresponds to section 29.1305(a)(24); the proposed sections 33.29(c)(2) and (c)(3) correspond to section 29.1305(a)(25).

#### *Section 33.67 Fuel System*

One commenter states that the FAA proposal is somewhat meager when compared with existing requirements in Joint Airworthiness Requirement Engines (JAR–E) for engines in which power output and associated conditions are controlled by automatic devices. The

commenter, therefore, suggests changing the wording from “\* \* \* means for automatic control of 30-second power” to “\* \* \* means for automatic availability and automatic control of 30-second OEI power.”

The FAA concurs with the suggested wording and the proposed § 33.67 is changed accordingly.

#### *Section 33.85 Calibration Tests*

One commenter states that Proposal No. 8 of the NPRM contains cross-referencing errors in the first sentence of the proposed § 33.85(c). It should state that “\* \* \* measurements taken during the endurance test described in § 33.87(f)(1) through (8) may be used \* \* \*”

The FAA agrees, and the changes have been made to the proposal.

One commenter states that, in the absence of any provision in the existing § 33.85 concerning the minimum period of stabilized conditions before taking measurements, it is not clear why the proposed § 33.85(c) is required. Alternatively, if this aspect needs to be included under § 33.85, it should address all engines, regardless of their power ratings.

The commenter further suggests that the following language would be more appropriate for § 33.85 (c) and (d):

(c) In showing compliance with the section, each condition must be allowed to stabilize before measurements are taken, except as permitted by (d) of this section.

(d) In the case of engines having 30-second, 2-minute, or 2½-minute OEI ratings, measurements taken during the applicable endurance test prescribed in § 33.87 may be used in showing compliance with the requirements of this section for these OEI ratings.

The FAA agrees, and has made the suggested changes to proposed § 33.85 (c) and (d). This proposal is required to provide an acceptable and viable approach for obtaining meaningful calibration data in the briefest time possible, consistent with the practical limits of the 30-second OEI and 2-minute OEI power ratings. The proposed § 33.85(c), which requires engine parameters to stabilize before recording measurements, is consistent with current § 33.85(a) requirements.

#### *Section 33.87 Endurance Test*

One commenter suggests that § 33.87(f)(5) be changed to read as follows: “50 percent takeoff power. One minute at 50 percent takeoff power.” The commenter reasons that the power level for a one-minute run at 50 percent takeoff power realistically represents the minimum OEI flight power and engine