

Design Certification

Part 21 Policy Updates

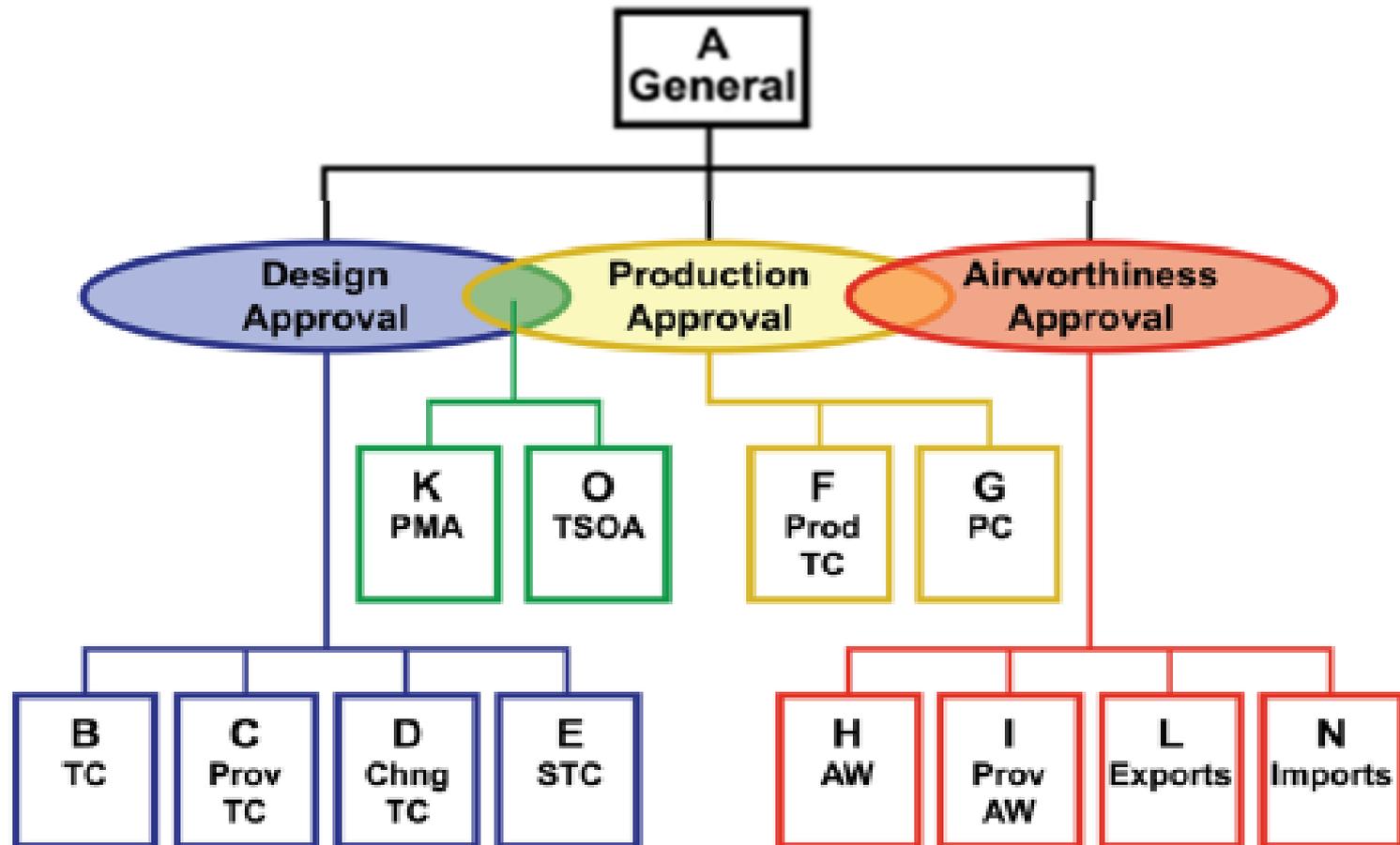
Sue McCormick
Design Certification Standards
Policy and Innovation
AIR-6C1
206-231-3242



Federal Aviation
Administration



Part 21 Roadmap



Summary of Policy Updates

- **Remote Technology**
- **Clarification of Responsibilities of Design Approval Holders for Major/Minor Changes**
- **Configuration Management Systems**



Remote Technology

This policy provides information on the use of remote technology in performing prototype conformity inspections, engineering and ground tests, engineering compliance inspections, production conformity inspections, and inspections for the issuance of an Authorized Release Certificate, FAA Form 8130-3, Airworthiness Approval Tags.



Scope

- **Engineering tests**
- **Conformity inspections**
- **Ground tests**
- **Engineering compliance inspection**
- **FAA Form 8130-3, Authorized Release Certificates for Airworthiness Approvals**



Request Process

- **Propose using PSCP or conformity inspection plan**
- **Concurrence needed from certificate managing office and designee performing the test, inspection and/or approval**
- **ODAs would add process/procedures to their ODA Procedures Manual**



Considerations

- Time stamping
- Multiple cameras, viewing angles, zoom
- Resolution and field of view appropriate for tests
- Special lighting
- Environmental / weather conditions
- Loss of sensory perception
- Policies restricting video usage



Documentation

- **Additional details outlined in the test plan**
- **Witness provides record for inclusion in test report**
 - Reference FAA Order 8110.4, paragraph 2-6(d)(1)
- **Equipment and setup must enable witness to verify all requisite conditions are met and a proper evaluation can be performed**

Procedures and Records

- **Same basic process as witnessing on-site**
 - Conformity complete
 - Unsatisfactory comments dispositioned
 - Video setup adequate for proper witnessing
- **Video is not required to be retained in the project file**
 - The video is a tool to verify proper test execution
 - Witness provides in documentation: equipment used, chronological description of tests and adjustment of equipment and adequacy of the video

Remote Witnessing Schedule

- Anticipate release 1st Quarter 2020



Clarification of Responsibilities of Design Approval Holders for Major/Minor Changes

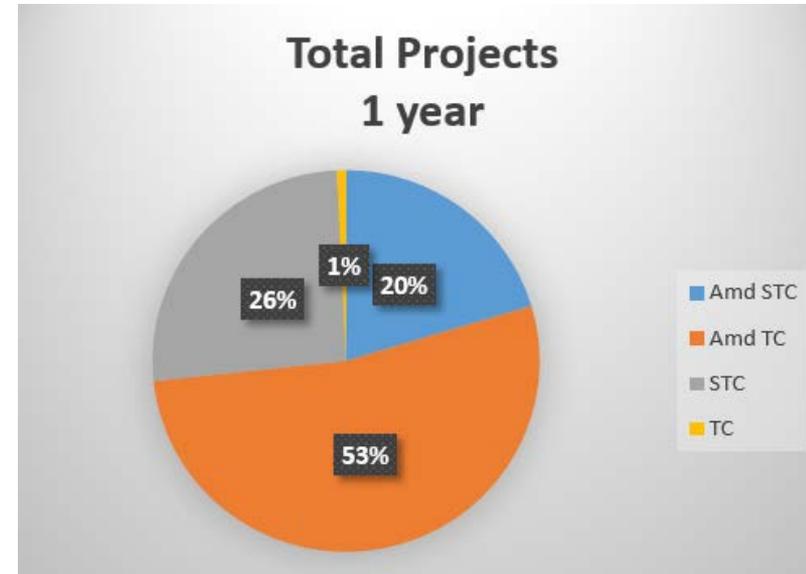
*This policy statement provides clarification for classification of design changes to products in accordance with the requirements of Title 14 of the Code of Federal Regulations (14 CFR) § 21.93(a).
This policy statement also provides a means to document a method to approve minor changes in type design to products before submitting to the FAA any substantiating or descriptive data (Ref. § 21.95).*

Part 21 – Subpart D

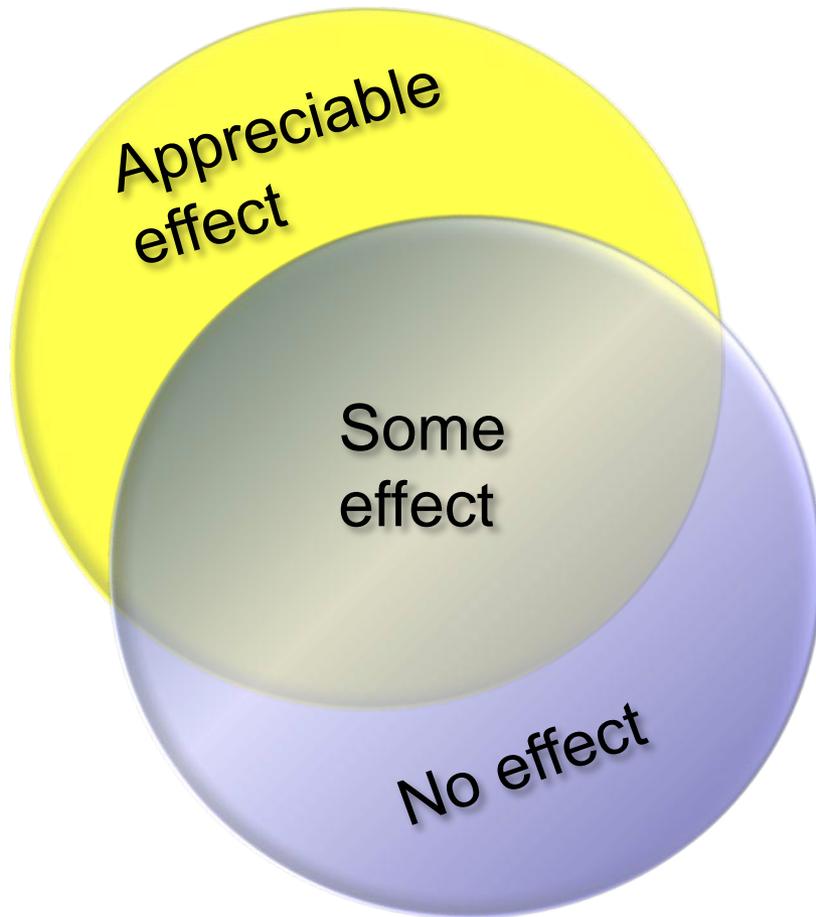
- **§ 21.93 Classification of changes in type design**
- **§ 21.95 Approval of minor changes in type design**
- **§ 21.97 Approval of major changes in type design**

Why Focus on Changes?

- FAA manages thousands of certification projects in a year (TC, STC, and Amdts)
- Nearly 99% of these projects were identified as “major changes” to certificates
- Lack of policy and guidance on major/minor change classifications has yielded conservative determinations (i.e., Projects are deemed major instead of minor)
- Auditing CPN descriptions, ~20-30% of all projects are incorrectly identified (and FAA managed) as major changes



Types of Changes



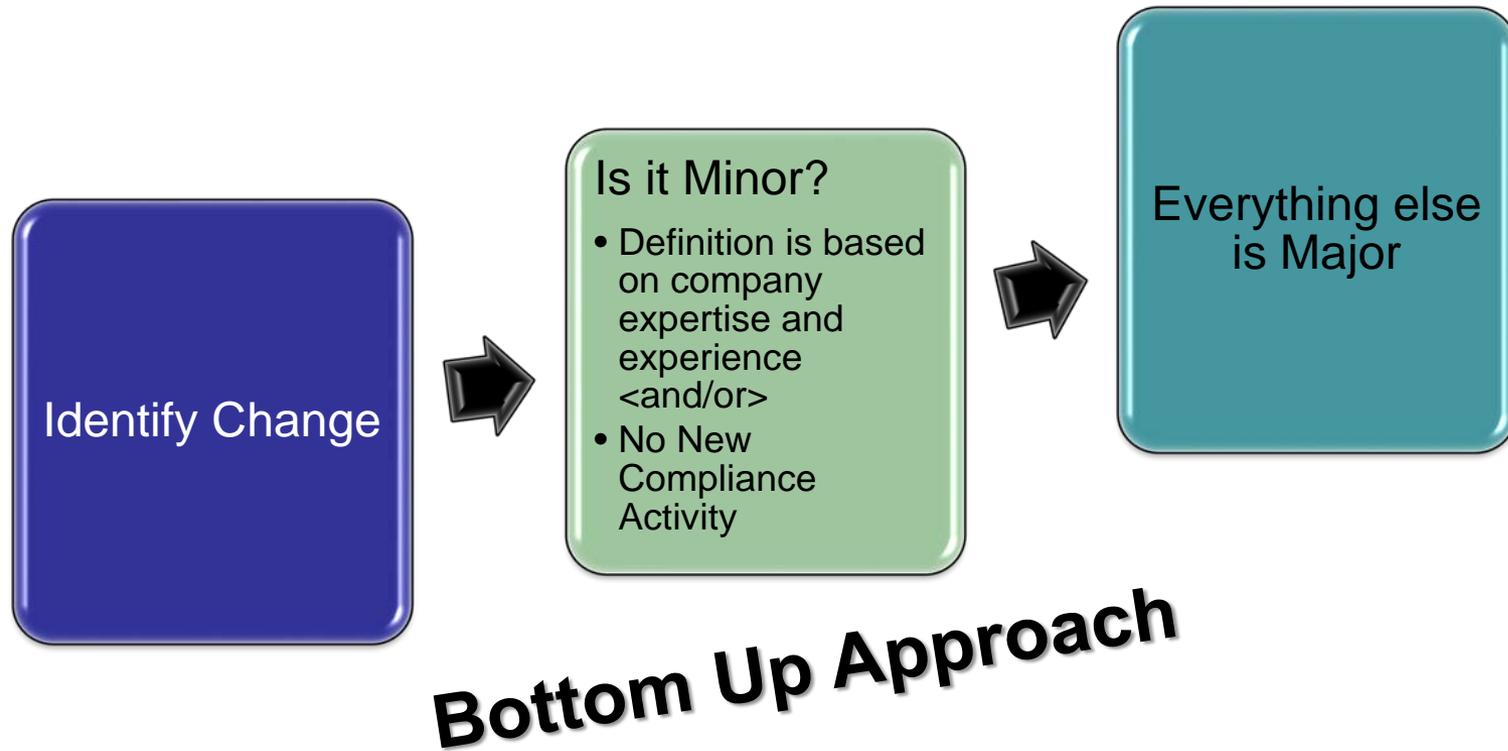
Major Changes

Minor Changes

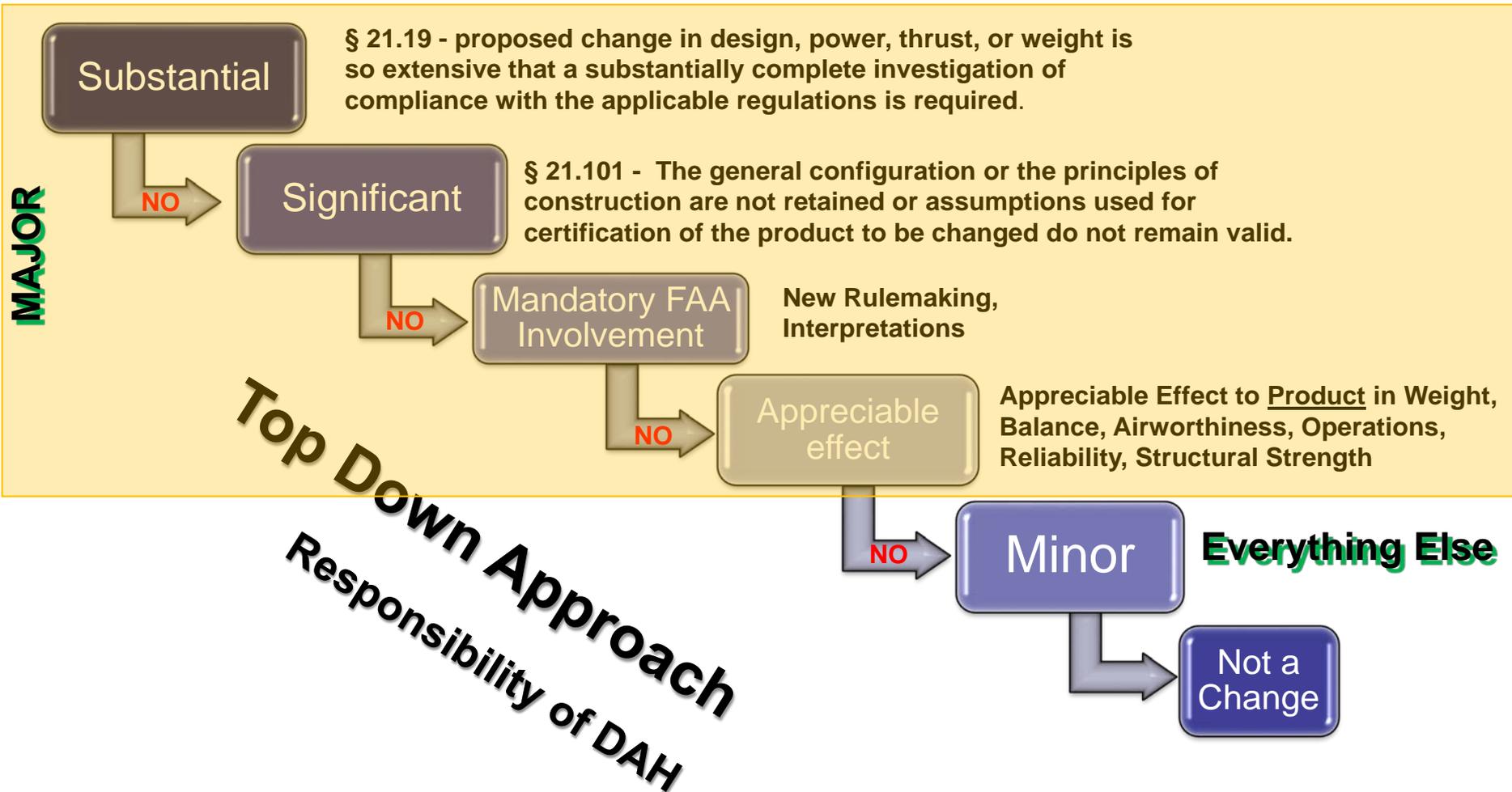
- Still require a showing of compliance to applicable requirements
- Applicable to current TC and STC holders

**EMPHASIS ON EFFECT TO THE PRODUCT (AIRPLANE, ENGINE, PROPELLER)
NOT AN EFFECT TO COMPLIANCE**

Historical Perspective



Determining What's Major/Minor



Elements of a Minor Change Agreement

The agreement defines holder responsibilities:

1. Design Approval Holder authorization for approving data in support of minor changes
2. Definition of minor in § 21.93(a) by defining what an “appreciable” change in type design is
3. Document justification/rationale for basis of minor classification to include addressing cumulation of minor changes
4. Process to show compliance for minor changes
5. Develop and approve technical data (e.g., drawings, reports, analyses, etc.)
6. Manage records and data
7. Training of Personnel
8. Self-Audit Process
9. Control of changes requested/made by internal and external stakeholders
10. Frequency and process for submitting changes to FAA (e.g., 3, 6, 9, etc. months)
11. Self-Disclosures
12. Organizational changes to key personnel
13. Continued Operational Safety

Major/Minor Policy Schedule

- **March 2019 – May 2019: Divisional Level Review and Field Review**
 - Comments closed May 24, 2019
- **All comments dispositioned and policy has been sent to FAA legal for review**
- **ECD for Public comment - TBD**



Configuration Management Systems (CMS)

This policy memorandum clarifies the FAA's discretion to accept alternative processes in lieu of the FAA conformity inspection processes as described in FAA Order 8110.4, Paragraph 5.3. This memorandum applies to applicants and existing design approval holders and production approval holders.



Background

- **Conformity is required by §§ 21.33(b), 21.35(a)(3), and 21.53**
- **Part 21 rules do not prohibit applicants from using an alternate method**
 - However...clarifications to policy are needed to provide for the FAA discretion to accept alternate conformity processes
 - Deviations are needed from certain orders that require specific forms to be used in the process
- **A policy memo is being drafted**

What is a CMS?

- **May use paper or digital formats to document conformity inspections for certification and/or production programs**
- **Commercial Information Technology tools are available and may be proposed**
 - Any tool or process must facilitate FAA project involvement and oversight (when determined) without undue burden on FAA personnel
 - Applicant's responsibility to demonstrate the process is capable of producing results equivalent to the traditional FAA conformity system

Applicability

- **Mature DAHs and PAHs only**
- **Can be used in any DAH project where FAA conformity inspections are applicable**
- **Acceptable across all Part 23, 25, 27, 29, 31, 33, and 35 products and modifications and replacement articles**

CMS Policy Memo Details

- **Must document “equal to or better than” the data, records, and pertinent information required on:**
 - Form 8120-10, *Requests for Conformity*
 - Form 8130-9, *Statement of Conformity*
 - Form 8100-1, *Conformity Inspection Record*
 - Records of non-conformities and their disposition
- **Deviation to orders needed to not use forms**
 - Orders 8110.4, 8120.22, 8110.37, 8100.15, 8110.42, and 8110.49, and others relevant to conformities

CMS Policy Schedule

- **Division Coordination – Q1 FY2020**
- **Policy Memo Release – Q2 FY2020**



Draft Directives, Policy and Guidance

In Legal Review	
Document Title	Document Type
Draft Policy, Remote Technologies	New Policy
Draft AC 21-56, Design Approval Holder Responsibilities for TSOs	New AC
Draft Policy, Classification of Major/Minor Type Design Changes	New Policy
Dispositioning Field Comments	
Document Title	Document Type
Draft FAA Order 8110.42, Parts Manufacturer Approval	Order Revision

Draft Directives, Policy and Guidance

With Divisional Management Team for Review	
Document Title	Document Type
Draft Revision to FAA Order 8000.79, Revision A	Order Revision
Draft Revision to AC 21-48, Revision A	AC Revision
Draft Policy, Configuration Management Systems (CMS)	New Policy



Draft Directives, Policy and Guidance

In Draft by SME

Document Title	Document Type
Draft AC 21-19, Changes Requiring a New Type Certificate	New AC
Draft Order, Type Certificate Data Sheet Procedures	New Order
Draft AC, Destroyed Aircraft	New AC
Draft Policy, Clarify 14 CFR 21.35 Flight Test Requirements	New Policy
Draft AC, Methods of Compliance	New AC
Draft AC, Traceability of Type Design	New AC
Draft Policy, Reuse of Descriptive Data	New Policy
Draft Revision to FAA Order 8110.4, Revision D	Order Revision
Draft AC, Type Certification	New AC
Draft Revision to AC 21-40, Revision B	AC Revision



Questions

Sue McCormick
Design Certification Procedures
AIR-6C1

susan.mccormick@faa.gov

(206) 231-3242

