DISPOSITION OF INTERDIRECTORATE COMMENTS

Draft Policy on Issuance of Special Conditions and Exemptions Related to Lightning Protection of Fuel Tank Structure and Systems, PS-ANM-25.981-02

FAA Contact: Massoud Sadeghi

No.	Comment	Requested Change	Disposition
	Commenter: Lee Nguyen, AIR-130		
1	Thank you for the opportunity to comment. **Definition of Key Terms.** Address flammable conditions in the fuel tank system, not fuel tank structure.	Add "system" at the end of "…flammable conditions in the fuel tank."	This comment is regarding the definition of "critical lightning strike." We disagree. For this definition, it is more inclusive of all flame conditions if the word "system" is not added. We make a distinction between system and structure later in the policy statement.
2	**Current Regulatory and Advisory Material.**	Delete first "and" and replace "streamering" with "streaming" in "…, and corona and streamering."	This comment is regarding § 25.954. This wording is similar to the way the regulation is written: * * * *(a) Direct lightning strikes…; and* *(b) Swept lightning strokes…; and* *(c) Corona and streamering….* "Streamering," is the correct term in this case, and "corona and streamering" are grouped together in the regulation, so both "ands" are appropriate in the description. No change required.
3	**Current Regulatory and Advisory Material.** The Policy Memorandum 00-113-1034 allows using Issue Paper to invoke Draft Advisory Circular 25.1309-Arsenal.	Add the following reference before the referenced Draft Advisory Circular 25.1309-Arsenal: Policy Memorandum 00-113-1034, *Use of ARAC (Aviation Rulemaking*	Agree. Policy Memo added.

No.	Comment	Requested Change	Disposition
		Advisory Committee) Recommended Rulemaking not yet formally adopted by the FAA, as a basis for equivalent level of safety or exemption to Part 25, dated January 4, 2001.	
4	**Background.** 14 CFR 25.981 addresses lightning protection of fuel tank structure and systems.	Replace "system" with "structure and systems" in the following sentence: This amendment to §25.981, which applies to the fuel tank system, requires the design be protected from lightning with failure tolerant features.	This is regarding the last sentence in the 4th paragraph in the background of Amendment 25-102 on page 3. "Structure and systems" is introduced in this policy and was not used in Amendment 25-102. Therefore, the suggested change will not be made.

No.	Comment	Requested Change	Disposition
	Commenter: ANE-150		
1	Page 2 *[now 3]*; The Draft Advisory Circular 25.1309-Arsenal, System Design and Analysis, dated June 10, 2002 is not in RGL.	Remove Draft AC from the Policy Statement.	See AIR-130 comment #3 (page 3). The addition of the reference to Policy Memorandum 00-113-1034 allows using an issue paper to invoke Draft Advisory Circular (AC) 25.1309-Arsenal. Even though this draft AC is not available on RGL it is widely used by industry. Therefore, we prefer to keep this reference.
2	Page 4; The paragraph that starts "One	Review what the industry practice is	Agree. Changed "has" to "had" to indicate past

No.	Comment	Requested Change	Disposition
	means of…" the second and third sentences contradict when referring to industry practice.	and correct one of the sentences.	tense.
3	Page 10 *[now 11]*; The third paragraph down, first sentence forth line "…will be such that that catastrophic…"	Change the second "that" to "the."	Agree. Deleted extra "that" rather than changing it to "the."

No.	Comment	Requested Change	Disposition
	Commenter: ACE-100		
1	Page 1 Summary Para 1 Sentence 1 Order IR 8100.16 states that Policy Statements cannot create or change regulatory requirements. The draft PS says it applies alternative requirements, which seems to create a conflict with the Orders requirements.	Change sentence to state; This policy statement provides guidance for applying Title 14, Code of Federal Regulations (14 CFR) parts 11 and 21 (specifically, exemptions, exceptions and special conditions) to the provisions of 14 CFR 25.981(a)(3) at Amendment 25-102 for lightning protection of fuel tank structure and systems.	We agree and made the following change: "This policy statement provides guidance for applying special conditions, exemptions, or the changed product rule as alternatives to direct compliance to the provisions of …" We made similar changes throughout the document where "alternative requirements" had been used.
2	Page 1 Summary Para 1 Sentence 1 14 CFR 25.981(a)(3) is usually referenced	Add 'or later' after amendment 25-102 references.	Agree.

No.	Comment	Requested Change	Disposition
	at Amendment 25-102 when referenced in the PS. Though changes introduced at Amendment 25.125 did not change 25.981(a)(3) wording, applicants seem to think that policy written with the statement 'at Amendment 25-102' only apply to that particular amendment version.		
3	Page 1 Summary Para 2 Sentence 1 Use of 'offset some reduction' implies to allow a reduction in requirements, which a PS is not supposed to do (per Order IR 8100.16).	Use; "The FAA has conducted research and issued standards for fuel tank flammability reduction that may demonstrate that the ignition prevention standards of § 25.981(a)(3) are too strict."	Partially agree that some clarification is needed. However, we do not agree with the commenter's suggested language as this changes the intended meaning of the sentence. Changed the original sentence to read, "The FAA has conducted research and issued standards for fuel tank flammability reduction that can be leveraged to maintain an acceptable level of safety when full compliance with the current ignition prevention standards of § 25.981(a)(3) cannot be achieved. "
4	Page 1 Summary Para 2 Sentence 4 The PS states: This policy statement promotes a standardized approach to applying these alternative requirements.	Use; This policy statement promotes a standardized approach to applying exemptions, exceptions and special conditions.	Partially agree. See the response to comment #1: We agree and made the following change: "This policy statement provides guidance for applying special conditions, exemptions, or the changed product rule as alternatives to direct compliance to the provisions of …" We made similar changes throughout the document where "alternative requirements" had been used.

DISPOSITION OF INTERDIRECTORATE COMMENTS

Draft Policy on Issuance of Special Conditions and Exemptions Related to Lightning Protection of Fuel Tank Structure and Systems, PS-ANM-25.981-02

FAA Contact: Massoud Sadeghi

No.	Comment	Requested Change	Disposition
5	Page 2 Definition of Key Terms Remote is used but once in the PS, also included is a condition that would be described as extremely remote, which should be defined. Extremely remote is used in 25.981(a)(3).	Add 'extremely remote' to definitions.	Agree. Definition has been added.
6	Page 2 definitions section Fault Tolerant and Non-Fault Tolerant terms are used throughout this policy statement without a clear definition. Several places in the policy statement discuss "..failure not anticipated to occur over the life of the fleet". This is defined as extremely remote (or extremely improbable).	Add definitions for the following terms: Fault Tolerant, Non-Fault Tolerant, Extremely Remote.	Partially agree. Definition has been added for "extremely remote." "Fault tolerant" and "non-fault tolerant" can be understood from their dictionary definitions.
7	Pg 2	Replace the reference to the Arsenal 1309 draft material with a paragraph defining the TAD policy to implement ARAC information via ELOS and for this subject, this means an ELOS is desired by the FAA to utilize the Arsenal 1309 draft material.	See AIR-130 comment #3 and ANE-150 comment #1. The addition of the reference to Policy Memorandum 00-113-1034 allows using an issue paper to invoke Draft Advisory Circular 25.1309-Arsenal.
8	Pg 4 ref to 25.901(c), Pg 12 *[now 13]* para 4, Pg 14 *[now 15]* para a alternative	Clarify that the minimum level of safety is established by excluding structural failures as specified by	Disagree. The information provided on page 2 under Background section is considered historical, which may be different from the information

No.	Comment	Requested Change	Disposition
	requirements The page 4 reference communicates that the regulatory level of safety utilizes 25.901(c) and 25.1309(b). The page 12 statement, "In practice this means that the FAA will not accept fuel tank system designs where a catastrophic failure condition can result from a single failure." appears consistent with 25.901(c) though the statement is not conditional on excluding failures but is rather clarified that potential latent failures must be considered. The alternative requirements of page 14 appear to provide a means contrary to the page 2 and page 12 references noted.	25.901(c) or if it is to be established via the alternate requirements identified on page 12; or both. Specify if the structural failure exclusion of 25.901(c) be prior to the probability sum calculation of the page 14's alternative requirement and hence omitted from the alternative requirement probabilities.	provided in the main body of the Policy. Also, reference the sentence, "In practice this means that the FAA will not accept fuel tank system designs where a catastrophic failure condition can result from a single failure." In addition, the subject of paragraph a on page 14 ("Alternative Requirements") pertains to system failures under § 25.1309 and not structural failures.
9	Page 7 *[now 8]*, paragraph under "Eligibility for consideration under this policy" If an applicant installs a fuel tank inerting system which meets or exceeds the Appendix M for all tanks, is it really necessary for them to show impracticality? As stated in the preamble for 25.102, the FAA might consider fuel tank flammability exposure in the future in meeting 25.981(a)(3). Seems like fuel tank inerting all tanks to Appendix M should permit a less stringent requirement of fault	Revise the first sentence to "….determine by the FAA to be impractical ***or provide acceptable compensating design features.***"	Disagree. The purpose of this policy, as stated, is to provide guidance for applying alternative requirements to 25.981(a)(3) at Amendment 25-102 for lightning protection of fuel tank structure and systems. Means of compliance and addressing all possible fuel tank design features is beyond the scope of this Policy.

No.	Comment	Requested Change	Disposition
	tolerant design for structural lighting protection without the burden of showing impracticality. Application for an exemption should still require a showing of impractical.		
10	Page 7 *[now 8]* Policy Section 2. Since PS aren't supposed to change reg's, Policy Section Paragraph 2. should be retitled.	Use; 2. Guidance for Exemption, Exception and Special Condition Usage.	Reference ACE-100 comment #1 [pg. 3]: We agree and made the following change instead of the commenter's suggested change: "Guidance for alternatives to complying with § 25.981(a)(3)" We made similar changes throughout the document where "alternative requirements" had been used.
11	Page 7 *[now 8]* Policy Section 2. Para 1 Sentence 4 This sentence seems to create a probability calculation, which is unnamed, and unspecified in means (combined). Are the three factors (prob of ign source, critical lightning strike, and flam cond) to be multiplied? What is its outcome threshold? The definition section didn't detail how a prob is to be associated with the critical	Is this critical lightning fuel vapor ignition event probability to be calculated for every potential failure in the fuel system? Does the combination of all event probabilities need specified (additive?) to get an aircraft level number? How is this probability to be used for justifying a exemption/exception?	As stated in the first sentence, the applicant's design goal is to provide fault tolerance wherever practical. However, to clarify, the following change was made to the latter part of the sentence in question: "…is such that catastrophic ignition is extremely improbable, i.e., it is not anticipated over the life of the fleet."

No.	Comment	Requested Change	Disposition
	lightning strike, this seems to create conflict with AC 25.981-1C where prob of lightning = 1).		
12	Page 7 *[now 8]* Policy Section 2. Para 1 Sentence 4 "not anticipated over life of the fleet" seems to be defining an extremely remote event.	Make exact requirement, i.e., define as an extremely remote event, which has an expected probability requirement.	See comment #11 above. The correct requirement is the catastrophic ignition must be extremely **improbable**, not extremely remote. See definitions.
13	Page 7 *[now 8]* Policy Section 2. Para 2 Sentence 1 Critical lightning protection feature definition is confusing.	Use; Critical lightning protection features are those that ***must be maintained*** to achieve a compliant design or provide protection as a condition of a special condition or exemption.	Disagree. The suggested rewording does not provide additional clarification to the requirement.
14	Page 8 Policy Section 2. Para 3 Sentence 3 Sentence contains 'and' which confuses meaning, should be dropped.	Use: Drawing and process limits are considered part of the basic design and conditions within those limits are not failure conditions.	Partially agreed. Changes made for clarification. Instead of the suggested change, changed sentence to read, "Drawing and process limits, and conditions within those limits, are part of the basic design and are not failure conditions."

DISPOSITION OF INTERDIRECTORATE COMMENTS

Draft Policy on Issuance of Special Conditions and Exemptions Related to Lightning Protection of Fuel Tank Structure and Systems, PS-ANM-25.981-02

FAA Contact: Massoud Sadeghi

No.	Comment	Requested Change	Disposition
15	Since practicality is a balance, does that make impracticality an imbalance? How does applicant show imbalance? What is the expected trip points at which means & cost don't provide a safety benefit? Examples are means but don't include cost impact.	Provide means to determine practicality value or provide example of comparison that makes a practicality determination.	Disagree. As stated in the Definitions of Key Terms, practicality is a *balance* of available means, economic viability, and proportional benefit to safety. These aspects are variable for each program and design.
16	Page 8 *[now 9]* Policy Section 2.a. Keep example headers consistent;	Use; (1) Design changes features determined to be practical. (2) Design changes features determined to be impractical. (3) Design, manufacturing and maintenance process determined to be practical. (4) Do we have/need examples of impractical processes?	Disagree. Commenter's (3) is actually a new section (b), whose header is in the same format as (a).
17	Page 9 *[now 10]* Policy Section 2.a. Last para. Use of should in this sentence would require IP per Attachment 1.	Use; Because non-fault-tolerant design features can be more easily addressed early in the certification process, applicants are encouraged to identify any potential non-fault-tolerant design features early in their design development.	This is now on page 10, last paragraph before 3. The following change was made instead of the commenter's suggested change: "An optimized design and certification can be achieved when the potential non-fault-tolerant design features are identified and developed early."
18	Page 8 and 9, paragraph b – examples of practical design, manufacturing, and maintenance processes This list is identified as practical processes,	The sentence introducing sub paragraphs a and b on page 8 leads one to believe paragraph b is only part of the practicality exercise if non-fault tolerance is being addressed. Add	Agree. Wording will be changed in lead-in paragraph for clarification per comments. "The following two sections provide guidance regarding the determination of practicality and

No.	Comment	Requested Change	Disposition
	but in reality it is a list of tasks necessary to show compliance to 25.981 regardless of whether an applicant is granted an exemption, special condition or provides a direct showing.	wording to make it clear the list of items under paragraph b are assessment tasks that must be competed to show compliance to 25.981 for both fault tolerant and non-fault tolerant designs and they are never considered impractical.	impracticality in providing fault tolerance *and list assessment tasks to show compliance to § 25.981 for both fault tolerant and non-fault tolerant designs."*
19	Page 10 Policy Section 3. Para 1 Sentence 1, Para 2 Sentence 1 A new term is introduced, flammable fuel tank environment (zone - FFTZ), for which a probability of being in a flammable condition is to be calculated. The PS doesn't provide an example of how this would be done. The PS doesn't provide a definition of a FFTZ, and leaves that to the applicant. How will every applicant's definition be evaluated for correctness? A means to calculate a probability for a lightning strike generating a current within the FFTZ isn't provided.	Add appropriate example of use.	Disagree. It is application specific and is the responsibility of the applicant to identify the flammable zone and the probability of lightning strike that could lead to catastrophic impact or failure.
20	Page 10 Policy Section 3	Add Paragraph return at; The following paragraphs identify those	Disagree. This sentence directly relates to the previous sentence. Breaking the paragraph does not add to the organization or understanding of the

DISPOSITION OF INTERDIRECTORATE COMMENTS
Draft Policy on Issuance of Special Conditions and Exemptions Related to Lightning Protection
of Fuel Tank Structure and Systems, PS-ANM-25.981-02
FAA Contact: Massoud Sadeghi

No.	Comment	Requested Change	Disposition
	Para 3 Sentence 2 A new paragraph should be used to introduce examples;	areas that should be addressed to support a determination of the exposure time of a structural discrepancy within a flammable fuel tank zone.	paragraphs that follow.
21	Page 10, third paragraph under item 3 The paragraph reads as if exposure time of EACH non-fault tolerant feature combined with flammability and critical lightning strike must to not result in a catastrophic failure is not anticipated over the life of the fleet (extremely remote or extremely improbable). The actual requirement from page 14, paragraph (3)(b) states all non-fault tolerant feature, when their fuel tank vapor ignition event probabilities are summed must be shown extremely improbable.	Clarify that the probability of fuel tank vapor ignition from all non-fault tolerant features ***when summed*** together must be extremely improbable so an applicant is not mislead.	Disagree. The policy statement uses "combine" in this paragraph because it is more encompassing of the possibilities and factors involved in determination of the probability of catastrophic failure of fuel tank structure and systems. For consistency, "summed" will be changed to "combined" in paragraph 5a(3)(b).
22	Page 11 *[now 12]* Policy Section 3.e. Sentence 2 Use of 'may' is problematic, as it is not defined.	Use 'should'.	Agree. Change will be made.
23	Pg 14 "… and all other non-fault tolerant features."	Specify the steps, concerns, subjects, etc. that will validate that "… all other non-fault tolerant features" are	Disagree. As is the nature of all FAA requirements, this policy is written general enough to cover all types of designs and programs. Giving

No.	Comment	Requested Change	Disposition
	This requirement provides an assumption establishing the validity of the probability number calculated. What establishes that the assumption is correct?	identified with the completeness required to validate that the probability number calculated is correct and accurate.	specific steps would be problematic as they may work for one program but not for all.
24	Page 15 *[now 16]*, first sentence in first *[second]* full paragraph Sentence states 25.981(a)(3) is inappropriate for fuel tank structure….when applicant shows those requirements are impractical. The previous paragraph states a special condition will be proposed when the design contains an unusual feature that exceeds the requirements of amendment 25-125. Shouldn't the unusual feature, inerting all tanks to appendix M, be a compensating feature that permits 25.981(a)(3) to be replaced by single fault tolerance described in paragraph 5(a)(1) thru (5). Requiring the applicant that includes a mitigating design feature (all tank inerting system) to demonstrate impracticality does not seem fair. They should only be required to show single fault tolerance for structural lightning protection without showing practicality since the inerting system essential provides more robust protection as compared to the exemption route. Impracticality should still be required for non-fault tolerant	Revise sentence to state "In addition, the FAA considers the requirement of 25.981(a)(3) inappropriate for fuel tank structure and systems lightning protection features where the applicant provides a flammability reduction system that complies with the appendix M requirements for all fuel tanks.	The policy is written so as not to identify specific means. Applicants can show that catastrophic failure of fuel tank structure and systems due to lightning can be prevented by a means *such as* inerting.

No.	Comment	Requested Change	Disposition
	features and systems.		
25	Pg 15 para b "This additional risk reduction would be considered a compensating feature that offsets some relaxation of the requirements contained in 25.981(a)(3)." This statement makes sense but seems disconnected from the alternative probability requirements noted of page 14. If the compensating feature is the basis for a reduction of ignition probability, what correlates those numbers? If the alternative requirement is not dependent on the risk reduction of the flammability reduction we need to say so.	Clarify the basis for the alternative requirements and how it correlates to, or does not correlate to the compensating feature of exceeding the flammability reduction requirements. Specify the probability credit value obtained by compliance with meeting the flammability requirements and also specify the probability credit value achieved by exceeding the flammability reduction requirements.	Disagree. This is a qualitative probability analysis, and it is purposely left to the applicant to show the FAA that the ultimate goal of preventing fuel tank explosion due to fuel tank structure and system failures is achieved.
26	Page 15 *[now 16]* App of Policy Section c.(1) Sentence 1 Don't understand purpose of repeating same conditions in second sentence. Use of 'as above', described above is not specific to location. What about pre-amendment 25-125 aircraft not subject to part 26? (i.e. business jets under 30 pax and < 7500 lbs payload)	Clarify	Partially agree. Changed "above" to "…in paragraph 5b." Added "…subject to part 26…" to the sentence that begins "For pre-Amendment 25-125 airplanes...."

DISPOSITION OF INTERDIRECTORATE COMMENTS

Draft Policy on Issuance of Special Conditions and Exemptions Related to Lightning Protection of Fuel Tank Structure and Systems, PS-ANM-25.981-02

FAA Contact: Massoud Sadeghi

No.	Comment	Requested Change	Disposition
	Commenter: T. Thorson, ANM-100B, 425-917-6508		
1	Page 3: 2nd paragraph, 2nd sentence: remove "then" from end of sentence (grammatical).	As noted.	Partially agree. Will delete "then" but will add "...at that time" to the end of the sentence.
2	Page 3 *[now 4]*: 5th paragraph, 1st sentence: remove "then" from end of sentence (grammatical).	As noted.	Will delete "then" and add "…at that time" in its place.
3	Page 2: revise definition of "remote" to be consistent with AC 25.1309.	"Remote" failure conditions are those unlikely to occur on each airplane during its total life, but which may occur several times when considering the total operational life of the fleet of airplanes of that type.	Partially agree. We revised the definitions for both "remote" and "extremely remote."
4	Page 2, definitions: include definition of "anticipated." "Not anticipated" and "extremely improbable" are used presumably interchangeably in policy. It's not clear that these are intended to have the same meaning.	Either provide a definition of "anticipated/not aniticpated" or revise policy to have common language.	Disagree. However, we added a definition of "extremely improbable," which uses the term "not anticipated," and changed some of the text on page 8 for clarification.
5	On page 13 in Section 4., it is implied that the alternative standards previously applied to fuel tank structure are acceptable for fuel tank systems even if the applicant cannot substantiate that compliance is impractical. However, the first bullet of paragraph 5.a on page 13 requires the applicant to substantiate impracticality.	No specific text changes are recommended; suggest removing the references to impracticality in regards to fuel tank systems if that is the intent.	Unlike the previous policy, this revised policy covers both structures and systems. However, for system designs that were found to be compliant previously, they, (and similar designs) are not expected to be considered impractical under this revised policy. Nevertheless, the principle of substantiating impracticality applies equally to any area, as it is a generic part 21 policy. No change

No.	Comment	Requested Change	Disposition
	This appears to be inconsistent.		needed.
6	On page 15, 1st full paragraph states: "the FAA also finds that an equivalent level of safety can be achieved with less stringent ignition source prevention requirements." This implies that the FAA could make a finding of equivalent safety for designs that meet the alternative standards which is not addressed in the policy.	Recommend revising "equivalent level of safety" to "acceptable level of safety."	Agree. Change will be made.
7	Page 16 *[now 17]*, last paragraph of section 5(c): there has been confusion in applying 25.981 for fuel tank changes to pre-amendment 25-102 airplanes as well.	Recommend adding a paragraph to clarify when Amdt 25-102 or later should be applied to fuel tank changes (or to clarify that 21.101 does not require applicants to meet 25-102 or later for non significant changes).	Disagree. This paragraph says, "If the change would not result in a significant reduction in the risk of a lightning related fuel tank vapor ignition event were it required to comply with § 25-981(a)(3)…" This paragraph already covers non-significant changes as related to lightning. However, we made a change in the text to clarify: If the change would not result in a significant reduction in the risk of a lightning related fuel tank vapor ignition event were it required to comply with § 25.981(a)(3) at Amendment 25-102, then the exception provision of § 21.101(b)(3), "would not materially contribute to the level of safety of the changed product," will be used to allow application of an earlier amendment of § 25.981(a).
8	Page 16 *[now 17]*, Section 7: it appears that 25.901(c) should be included for fuel tank systems similar to how 25.954 was addressed.	Recommend including 25.901(c) in Section 7.	Section 25.901 is a design requirement specific to the power plant and auxiliary power unit, not fuel tank systems or structure.

DISPOSITION OF INTERDIRECTORATE COMMENTS

Draft Policy on Issuance of Special Conditions and Exemptions Related to Lightning Protection of Fuel Tank Structure and Systems, PS-ANM-25.981-02

FAA Contact: Massoud Sadeghi

No.	Comment	Requested Change	Disposition
	Commenter: Serj Harutunian, ANM-140L 562-627-5254		
1	2. Definition of Key Term, A "critical lightning strike"	Add definitions for "sufficient amplitude" and "flammable conditions" and locations.	Disagree. These terms (balance of available means, economic viability, and proportional benefit to safety) vary by design and cannot be definitively defined in this policy.
2	"Fuel tank structure"	Add: "openings" or "gaps"	Disagree. The list of examples in the definition is not intended to be all inclusive.
3	"Practicality	Rewrite: "balance of economic viability of available means, and proportional benefit to safety.	Disagree. These are three independent aspects that provide a broader scope than the suggested change.
4	5 *[now 6]*. Relevant Past Practice To say "compliance with 25.981(a)(3) "…need a design with three reliable, independent and redundant protective features to prevent an ignition sources" is a presumption and sets specific mandatory design solution. Section 25. 981 (a)(3) does not say that and compliance with it may not require triple redundant design features.	When we state that an applicant typically needs three reliable, independent, and redundant protective features, compliance, per the rule, may not actually require this. The way the policy statement is currently written implies triple redundant features are required. Suggest it be modified to not leave the reader with the interpretation that 3 features are required.	Disagree. "Typically" implies "often" not "always."
5	7 *[now 8]*. Policy. "FAA will apply 25.981(a) at an earlier amendment level." This does not state what earlier amendment level would be used and isn't required to be stated.	Delete the second sentence and revise the third sentences to read: *Specific policy on the application of § 21.101 for type design changes,* ***where we determine exceptions are***	Disagree. Clarification is provided in Application of the Policy section, paragraph 5c(3).

No.	Comment	Requested Change	Disposition
		appropriate, *are discussed below.*	
6	7. Guidance for Alternative Requirements. The first paragraph appears to indicate that we will require an applicant to provide additional (above the regulatory requirement) fault tolerance against additional ignition sources if has little economic impact (i.e., if it is "practical"). If this is the case, it would be going beyond our charter of requiring compliance to the minimum safety requirements as stated by the regulations.	Please clarify the interpretation. If it is within our regulatory responsibilities, please clarify this in the PS. If it is something we would like to do to enhance safety, above the regulatory requirements, please provide the justification in the PS.	Disagree. It is not the intent to require addition fault tolerance. As the policy statement states, if the means have little economic impact, they are considered practical. If there is an economic impact, it is not necessary to use these means "if it can be determined that the probability of a potential ignition source, combined with a critical lightning strike and flammable fuel tank conditions is such that catastrophic failure is not anticipated over the life of the fleet."
7	Page 9. Items (2) and (3) are inclusive.	Combine	Disagree. Item (2) deals with the proposed design (pre-build process) and item (3) deals with manufacturing processes (actual build process).
8	Page 10. 3. Evaluation non-fault tolerance. Not sure what this paragraph is trying to say. Is it: a) The goal is to show that there is no "non-fault tolerant structure" within a flammable fuel tank environment, for which lightning electrical current of sufficient density can reach and cause an ignition? or b) to show that there are non-fault tolerant	If the answer is a), clarify in this PS that no non-fault tolerant structure is allowed in a flammable fuel tank environment where a lightning strike with electrical current with sufficient density can cause an ignition. If the answer is b) , then Delete: "will not be anticipated in the life of the fleet"	The statement in this paragraph is intended to address the fact that there could exist a non-fault tolerant structural detail located in a flammable fuel tank for which a lightning electrical current can reach and cause an ignition source, but that for such a non-fault tolerant structural detail, the applicant must demonstrate that such an ignition source will not be "anticipated" for the life of the fleet. We do not agree to make the recommended change because an applicant cannot demonstrate that such an event will never occur. This is similar to the condition when an applicant demonstrates that the occurrence of an event is extremely improbable,

No.	Comment	Requested Change	Disposition
	structure located in a flammable fuel tank, for which lightning electrical current can reach and cause an ignition source, but will show that this will not be "anticipated" for the life of the fleet?	Add: will not occur on any airplane.	they cannot say it will never occur, but rather its occurrence is extremely unlikely. That is, it will not be anticipated in the life of the airplane fleet.
9	Page 11 *[now 12]*. c., d. **c**. …test data to support.., …critical lightning strike... d. …lightning strike...,	Clarify what are the "test data" and differences between critical lightning strike and a lightning strike.	Disagree. Clarification of test data is not necessary. As required in any certification evaluation to show compliance to the FAA regulatory requirements, the applicant must perform necessary tests to generate data to prove their system is designed and operated for all foreseeable environmental conditions. This may vary from program to program. Critical lightning strike is defined on page 2 in the Definition of Key Terms section. Lightning is a general term that is not necessary to define.
10	Page 16, 17. We don't understand why this policy statement is needed before the rule is updated. Suggest it not be issued.	Hold this policy pending new rulemaking. There are no urgent needs for it at this time.	The intent of this policy statement is to alleviate the burden associated with the issue paper process for both the FAA and industry. The rulemaking process can take several years.

No.	Comment	Requested Change	Disposition
	Commenter: Eric Smith, ANM-140L 562-627-5260		
1	Page 5 *[now 6]*, Relevant Past Practice, The DRAFT policy states:	Suggest giving an example of the three "reliable, independent, and redundant	We purposely do not list specific features for the design in the policy statement. That must be the

No.	Comment	Requested Change	Disposition
	"*As it applies to fuel tank lightning protection for basic airplane structure, compliance with § 25.981(a)(3) would typically need a design with three reliable, independent, and redundant protective features to prevent ignition sources.*" It's not clear what those three things typically are as it relates to lightning protection and structure.	protective features" and why three.	responsibility of the applicant to develop unique features that are appropriate for their particular design to meet the regulatory requirements.

No.	Comment	Requested Change	Disposition
	Commenter: jml / AFS-330 (202) 385-4281		
1	Page 2 *[now 3]*, ADD url (web) LINK to 5th bullet regarding "*Draft*" Arsenal AC 25-1309. This *Draft* AC is the work of an ARAC and is widely used among the industry and needs to be available.	Link to ADD is: Draft Advisory Circular 25.1309-Arsenal http://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/449	Disagree. Since, as the commenter states, it this draft AC is widely used by industry, it is not necessary to include a link that could change over time.