

CHANGED PRODUCT RULE

DER Recurrent Seminar

Seattle ACO

November 4-6, 2003

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Discussion

14 CFR § 21.101

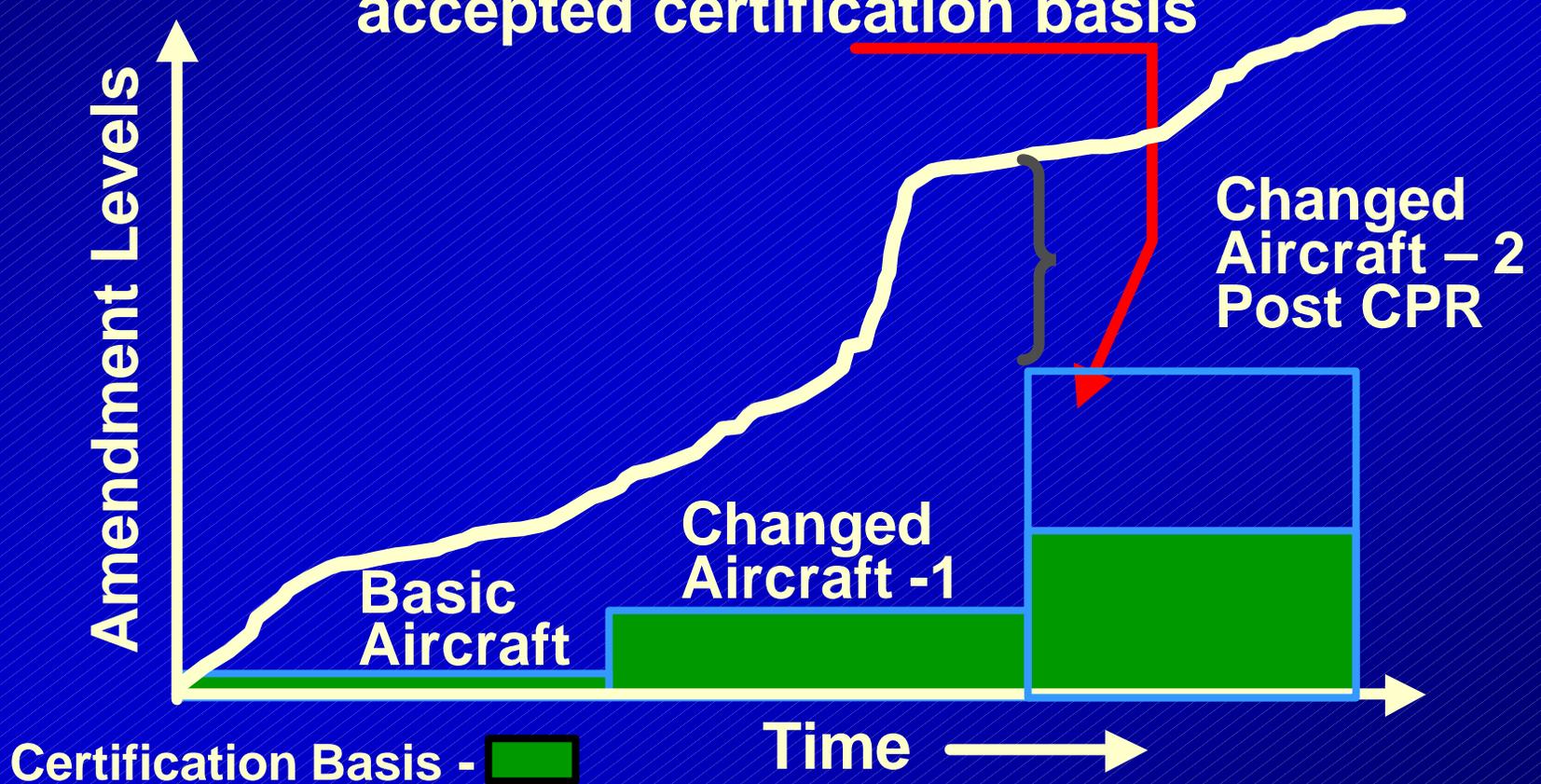
- † Designation of Applicable Regulations
- † Why the rules have changed
- † Fundamental principles contained in CPR
- † Generic process for establishing certification basis of a changed product

Intent of the Rule

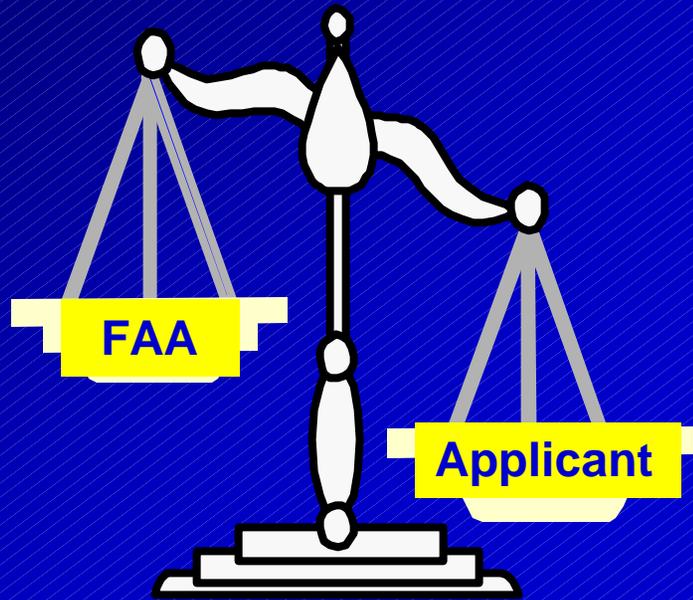
- ✍ **Enhance safety by applying latest airworthiness standards for certification of *significant* changes to products, to greatest extent practical**
- ✍ **Applies to ATC, STCs, and ASTCs**

Modified Aircraft Cert. Bases Lag Behind Current Regulations

Gap between latest amendments and accepted certification basis



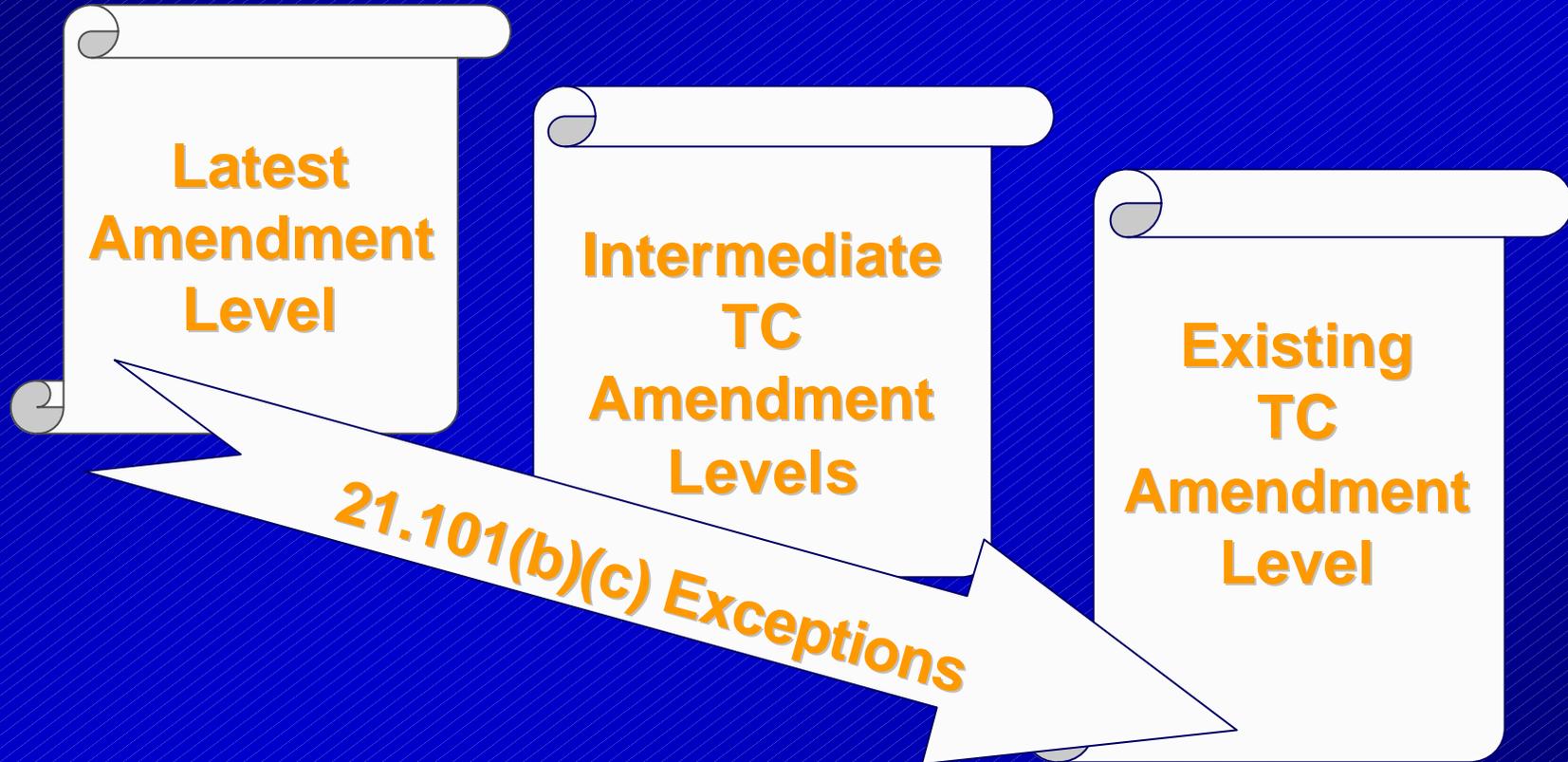
Shift in Responsibility



The Applicant must now

-  **Determine when a change is significant or not significant**
-  **Apply the latest regulations for all significant changes**
-  **Propose exceptions**

New 21.101(a) — Default is Latest Amendment



New 21.101(b)

 **Compliance with earlier regulations may be allowed if Administrator finds the:**

- † Change is not “significant,” *or***
- † Area not affected by the change, *or***
- † Compliance with latest airworthiness requirements would not contribute materially to level of safety, *or***
- † Compliance would be impractical**

New 21.101(c) — Excepted Products

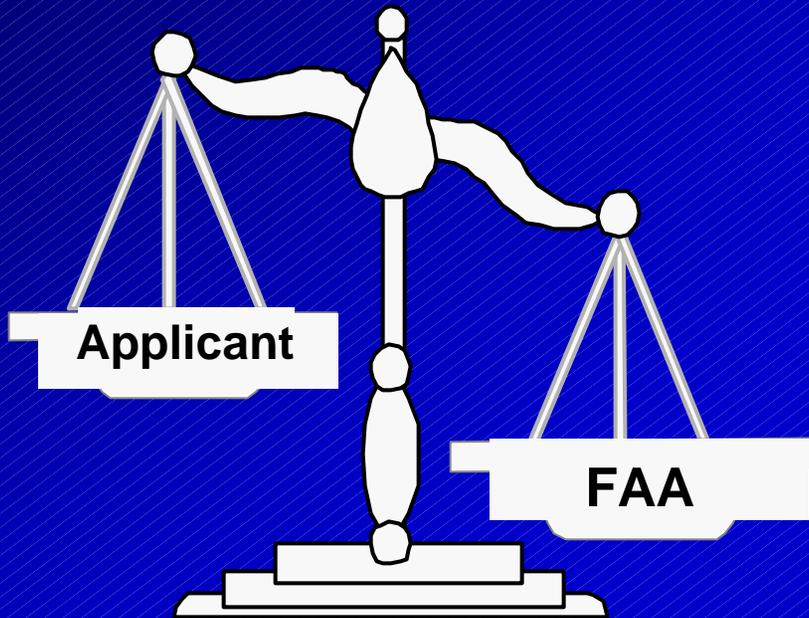
Applies to:

 **Aircraft ? 6000 lb**

 **Non-turbine rotorcraft ? 3000 lb**

 **Applicant may show compliance with existing certification basis unless Administrator finds change is significant in an area**

FAA has Burden to Identify *Significant* Changes to Excepted Products

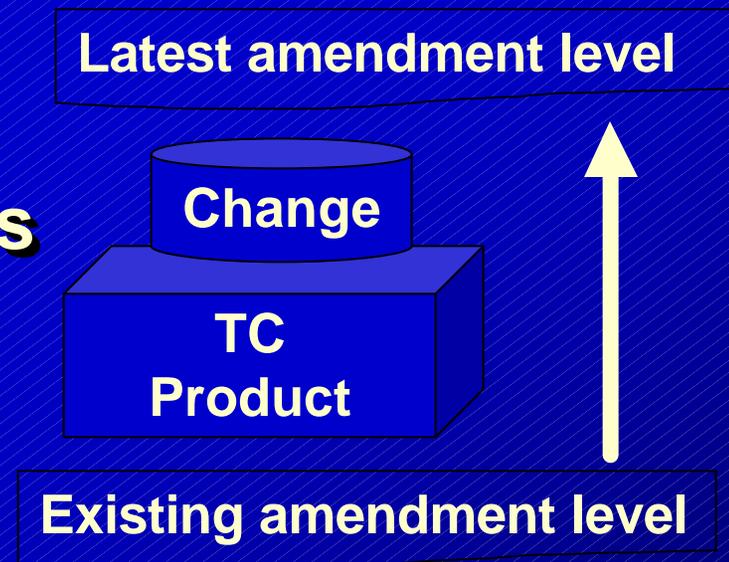


If Administrator finds change is significant, the Administrator may designate compliance with a later amendment to the regulations

FAA Identifies Applicable Regulations

Bottom-Up Approach

- ✍ **Begin with regulations referenced in TC**
- ✍ **Review later amendments**
- ✍ **Identify appropriate amendment level**



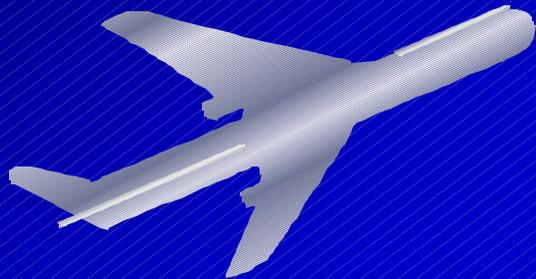
Significant Changes to Excepted Products

-  **Applicant may elect to apply exceptions**
 -  **Area not affected by the change, or**
 -  **Compliance with later requirements would not contribute materially to level of safety, or**
 -  **Compliance would be impractical**
-  **Burden on applicant to demonstrate**

New 21.101(d) — Special Conditions (21.16)

-  **Used for novel or unusual design features for which no appropriate standards exist**
-  **Meet levels of safety consistent with the agreed upon certification basis**

New 21.101(e) — Effectivity Period of Application



**Transport Category
Aircraft - 5 years**

Other aeronautical products - 3 years

***Effective period applies to issuance of,
or amendment to, both TCs and STCs***

New 21.101(f) — Other Category Aircraft

 **Applies to aircraft certificated under**

- † Special Class - 21.17(b)**
- † Primary Category - 21.24**
- † Restricted Category - 21.25**
- † Surplus Military - 21.27**
- † Limited Category**

Significance for Other Category Aircraft

For significant changes

- † Amendment level appropriate for the aircraft category
- † Consider intended use
- † Consider operational limitations
- † Latest requirements may not be appropriate
- † Reference Order 8110.48

Category	If the certification basis is ...	Then, the starting point for modifications to existing aircraft is ...	And the applicant should ...
21.17 (b) Special Class	Portions of 14 CFR Parts 23, 25, 27, 29, 31, 33, or 35	Latest amendment of applicable 14 CFR sections	Consider intended use (passengers, flight instruction)
	Other than FARs, for example, JAR 22, JAR VLA	Existing certification basis	Use later or latest “other” standard based on intended use
21.24 Primary	Portions of 14 CFR Parts 23, 27, 31, 33, or 35	Latest amendment of applicable 14 CFR sections	Consider intended use (passengers, flight instruction)
	Other than FARs, for example, JAR	Existing certification basis	Use later or latest “other” standard based on intended use
21.25a(1) Restricted	Portions of 14 CFR Parts 23, 25, 27, 29, 31, 33, or 35; CAR 3, CAM 8	Latest amendment of applicable 14 CFR sections	Consider intended use based on special purpose
21.25a(2) Restricted or Limited (CAR 9)	Based on military qualification acceptance and service history	14 CFR § 21.27(f) table	Consider intended use based on special purpose
21.27 Surplus Military	Portions of 14 CFR Parts 23, 25, 27, 29, 31, 33, or 35 and predecessor regulations	Latest amendment of applicable 14 CFR sections	Consider intended use, including standard airworthiness certificates

CPR Effectivity

 **June 10, 2003 for all products**

 **JAA and Transport Canada implement CPR on same date**

Introduction to the CPR Process

- † Describe the process of establishing a certification basis for a changed product
- † Explain steps used to establish a certification basis

Introduction to the CPR Process

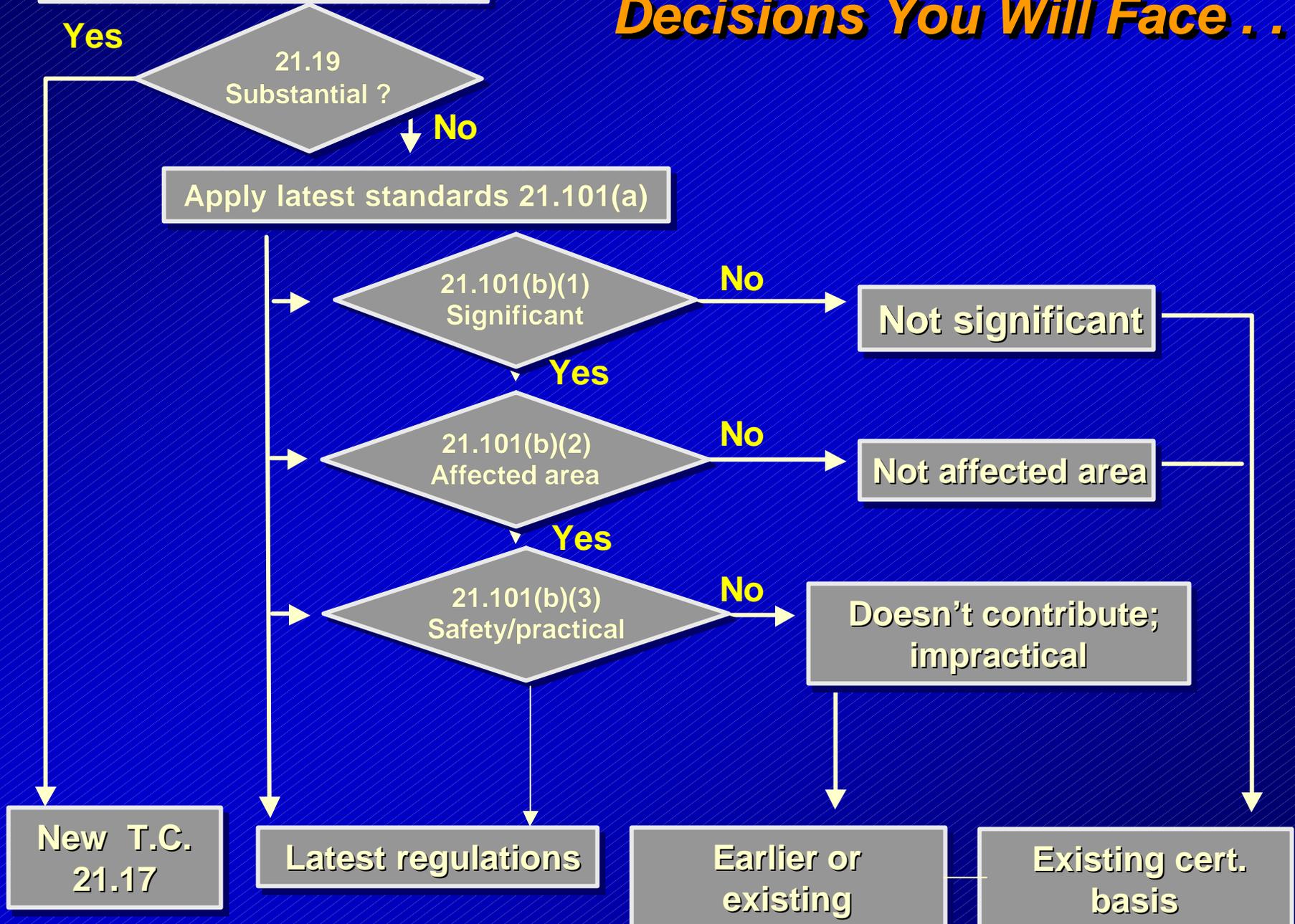
† **Advisory Circular 21.101-1 Change 1**

† **Order 8110.48**

† **Find on FAA website**

Proposed Design Change

Decisions You Will Face . . .



Step 1

Identify proposed change(s)

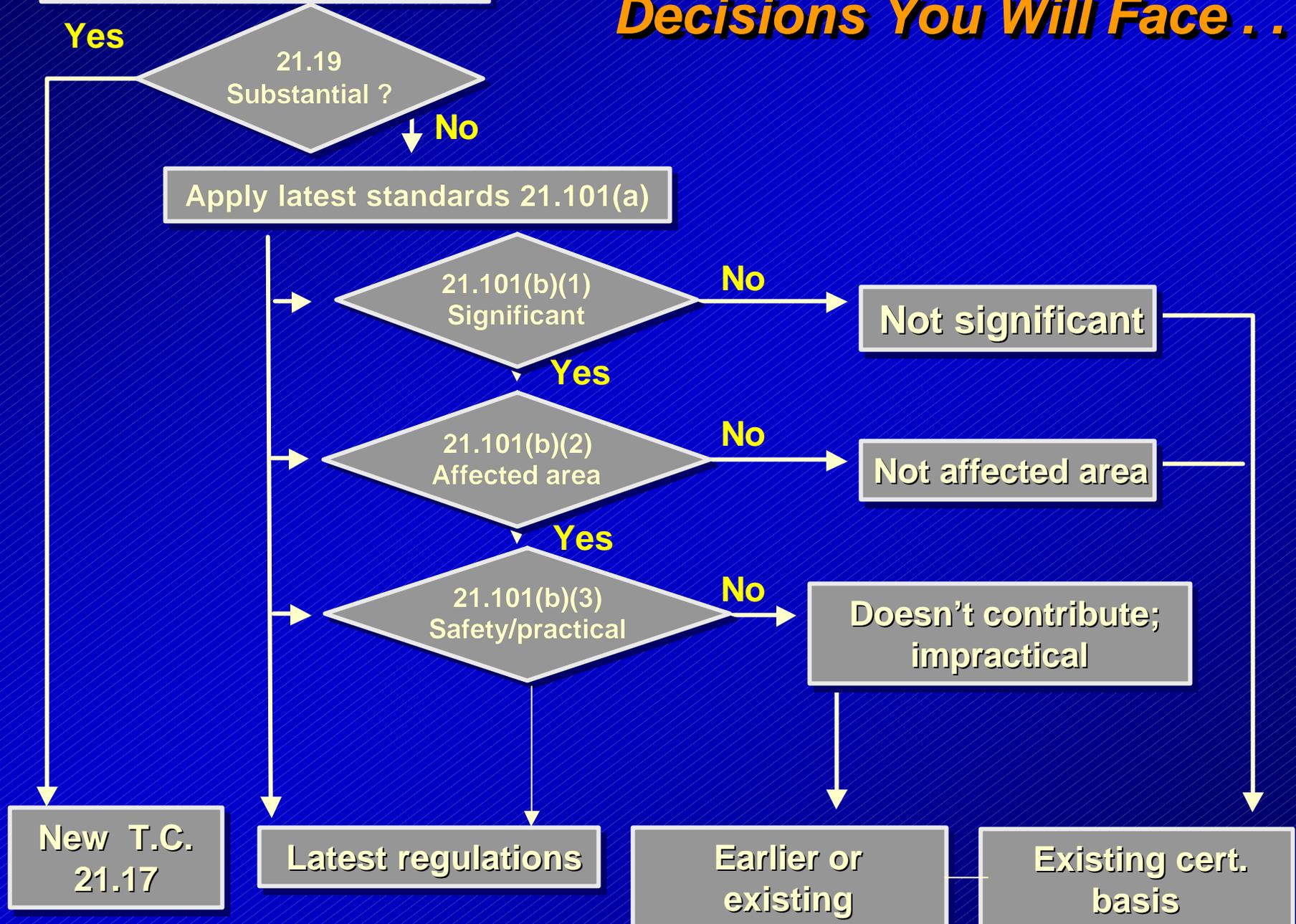
- † Include previous relevant design change(s)
- † Assess effects of the change on other systems and components
- † Identify the change and its effect on the product

Substantial Decisions

- ✍ **If FAA *determines change substantial*,**
 - ✚ **Applicant must apply for new TC**
 - ✚ **Certification basis will be regulations in effect on date of TC application**

Proposed Design Change

Decisions You Will Face . . .

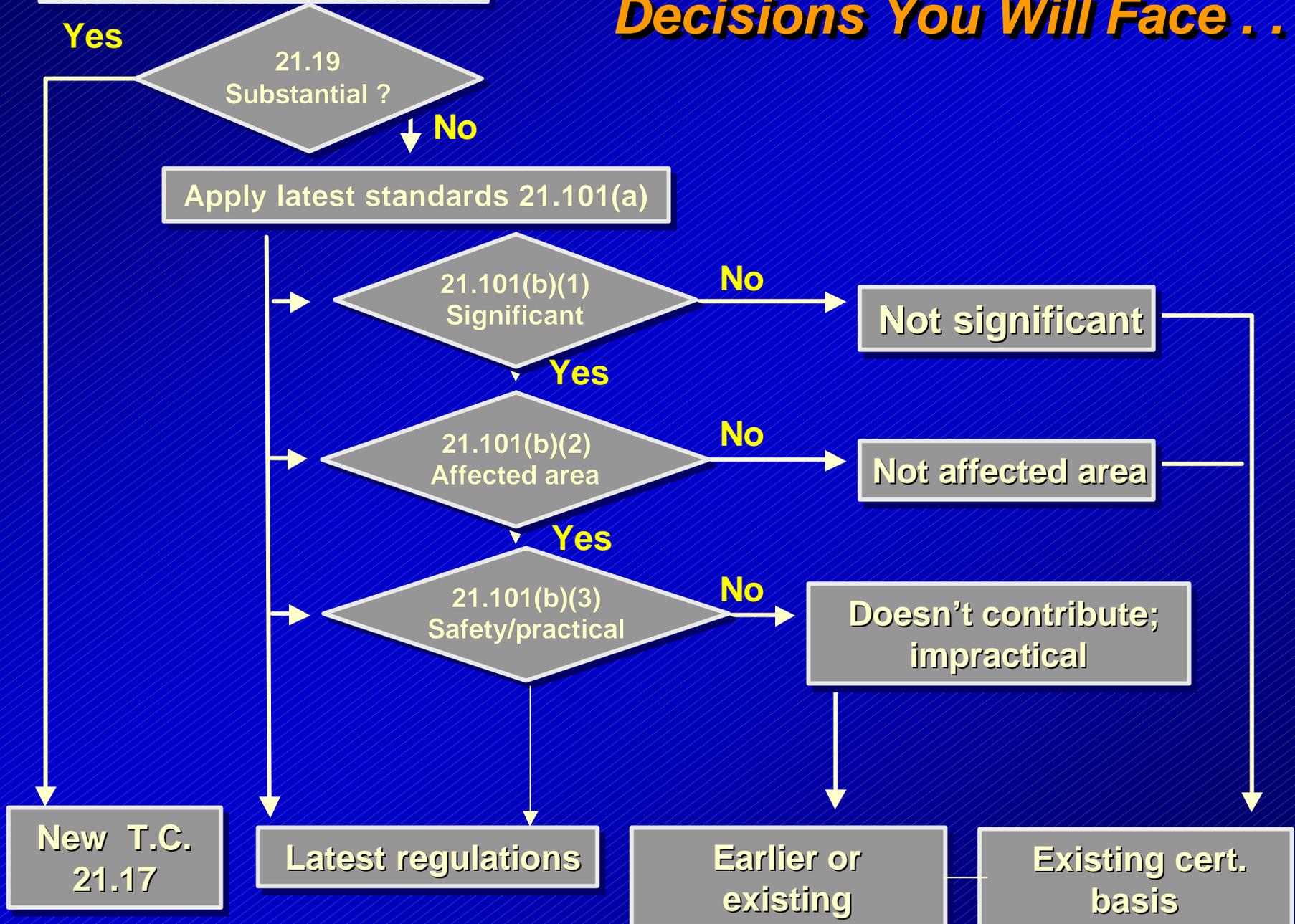


New 21.101(a)

-  **Applicant for a change must show that the changed product complies with the airworthiness requirements in effect on date of application**
-  **Exceptions allowed under 21.101(b)(c)**

Proposed Design Change

Decisions You Will Face . . .



21.101 (b)(1) Significant Change

 **21.101(b)(1)(i) and (ii), identifies the automatic criteria for assessing *significant*:**

† **General configuration not retained**

† **Principles of construction not retained**

† **Assumptions used for certification do not remain valid**

 **Must meet the latest regulations if any of these criteria are met at the product level**

Product-Level Change (PLC)

- ✍ Establishes framework to assess if change is significant or not significant
- ✍ Defined at aircraft, aircraft engine, or propeller level of change
- ✍ Individual changes or combination of changes that make the product distinct from other models of the product

Consider Previous Relevant Design Changes

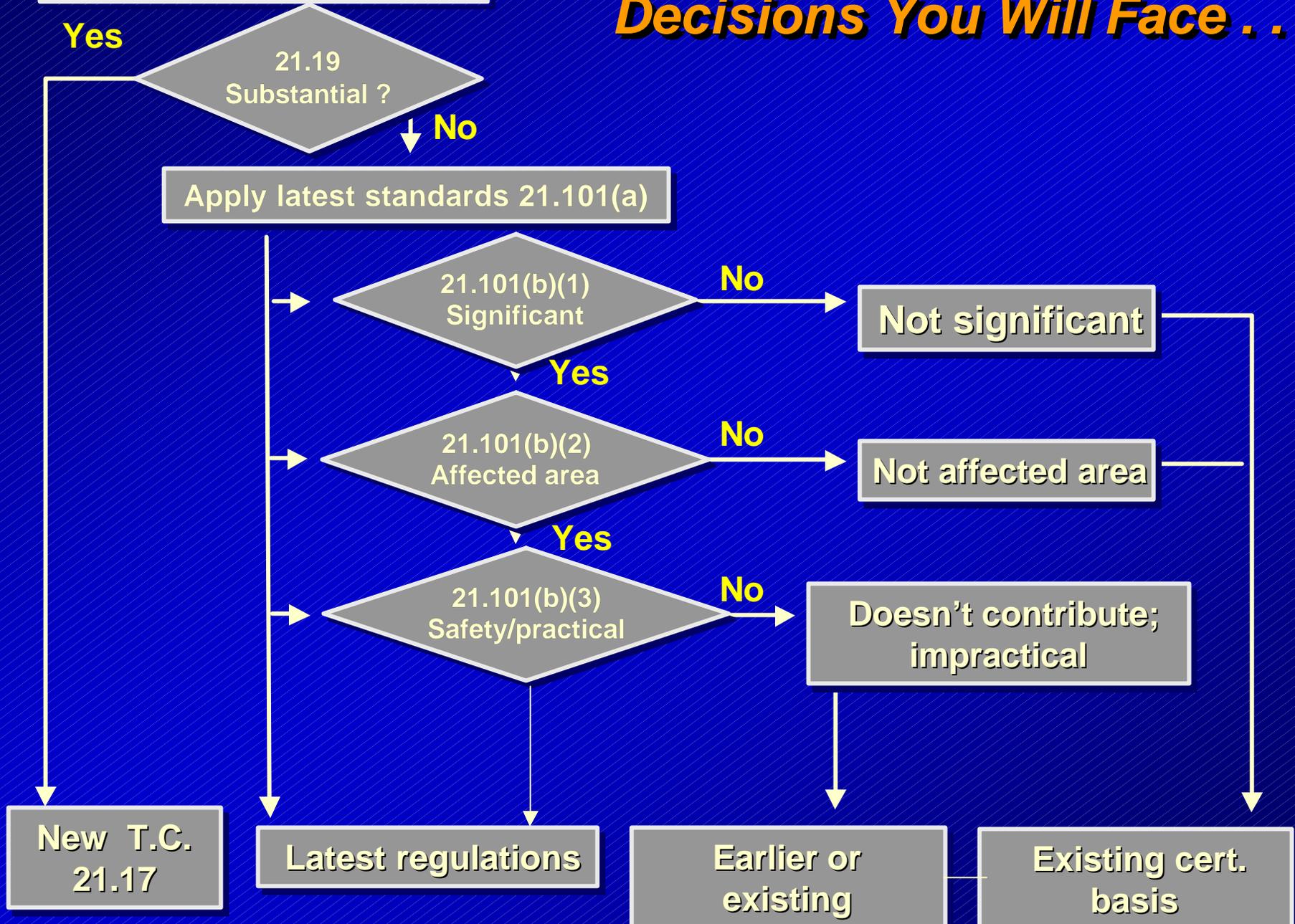
- ✍ Applicant is responsible for evaluating proposed change and all previous *relevant* changes
 - † Includes product design changes by TC/STC holder and *relevant* design changes by after-market modifiers

Significant Exceptions

 **If a change is significant, applicant may propose to use exceptions in 21.101(b)(2) and (b)(3)**

Proposed Design Change

Decisions You Will Face . . .



21.101(b)(1), *Not Significant*

-  **Allows compliance to earlier or existing regulatory amendment if change is *not significant* at the product level**
-  **If referenced certification basis do not contain adequate requirements, later amendments must be applied**
-  **Certification procedures for Special Conditions apply**

Adequacy of Certification Basis

 **Not significant changes can comply with the existing certification basis if:**

- † **There are no retroactive requirements**
- † **The certification basis is “adequate”**

 **The certification basis is inadequate if:**

- † **Change includes features not envisioned in original design**
- † **Nothing in certification basis addresses the change**

Streamlined Authorization Process

- ✍ **FAA may authorize applicant to make a determination of not-significant *without further FAA finding***
- ✍ **Written agreement *required***

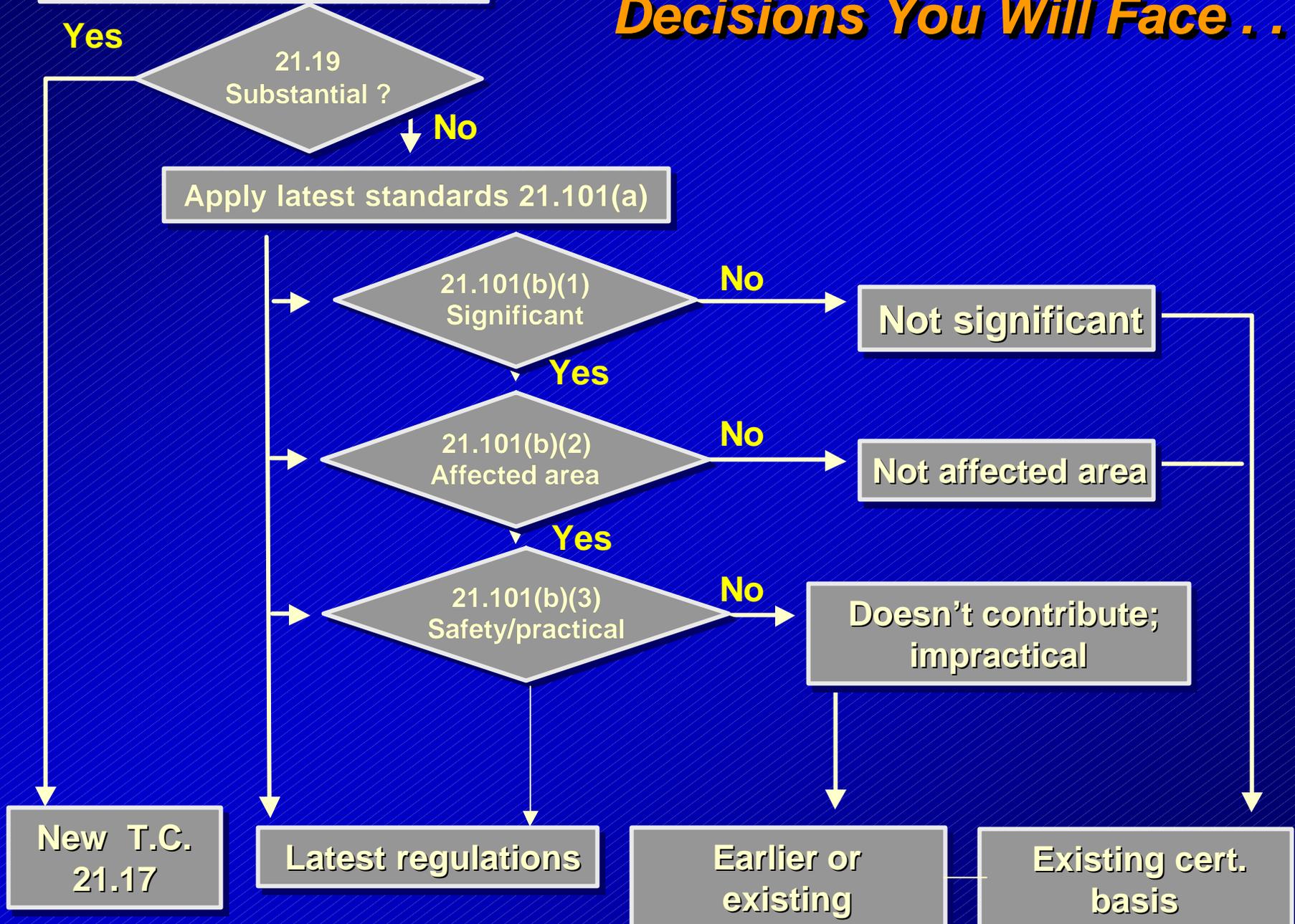
Authorization, continued

Written Agreement

- † Defines system used to make determination of significance
- † Defines FAA oversight
- † Stand alone document, or
- † Incorporated into Partnership for Safety Plan (PSP), Organization Procedures Manual, applicant's quality manual, or existing Memorandum of Agreement (MOA)
- † Contact Local ACO for guidance

Proposed Design Change

Decisions You Will Face . . .



21.101(b)(2)

 The applicant may show compliance with an earlier amendment of a regulation for:

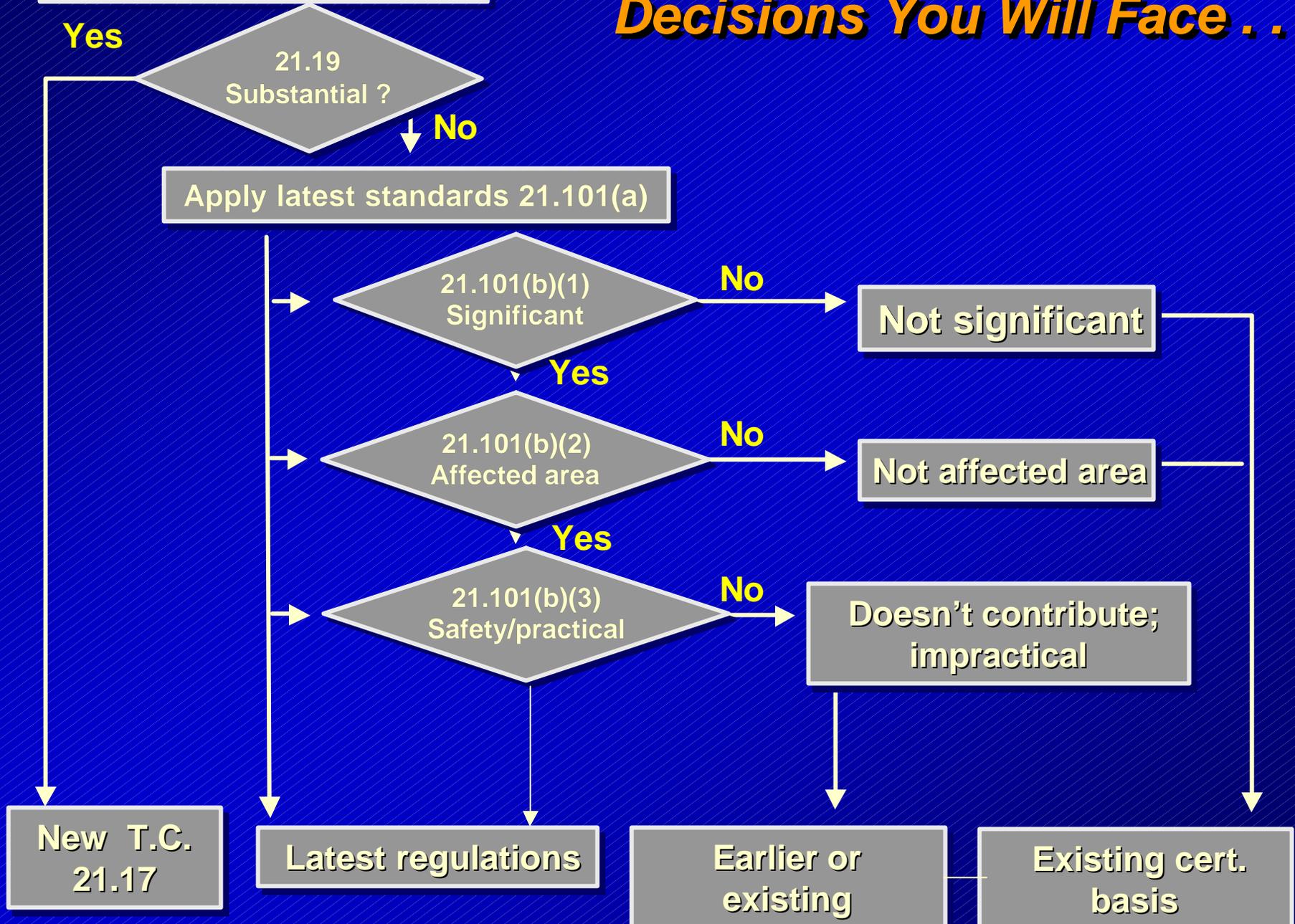
(b)(2) Each area, system, component, equipment, or appliance that the Administrator finds is *not affected* by the change

Not Affected Area

- ✍ **Rule change did *not* introduce any new concept regarding *not affected area***
- ✍ **No new procedures**
- ✍ **Compliance finding process remains the same**

Proposed Design Change

Decisions You Will Face . . .



21.101(b)(3) - Exceptions

- ✍ Applicant may show compliance with an earlier regulation if compliance with the regulation in effect on the date of application:**
 - ✍ would not contribute materially to changed product's level of safety**
 - or**
 - would be impractical.**

Does Not Contribute Materially to the Level of Safety

Not an equivalent level of safety finding

-  **Equivalent level of safety finding indicates that product meets intent of rule**

-  **Equivalent level of safety finding gives credit for a specified amendment level**

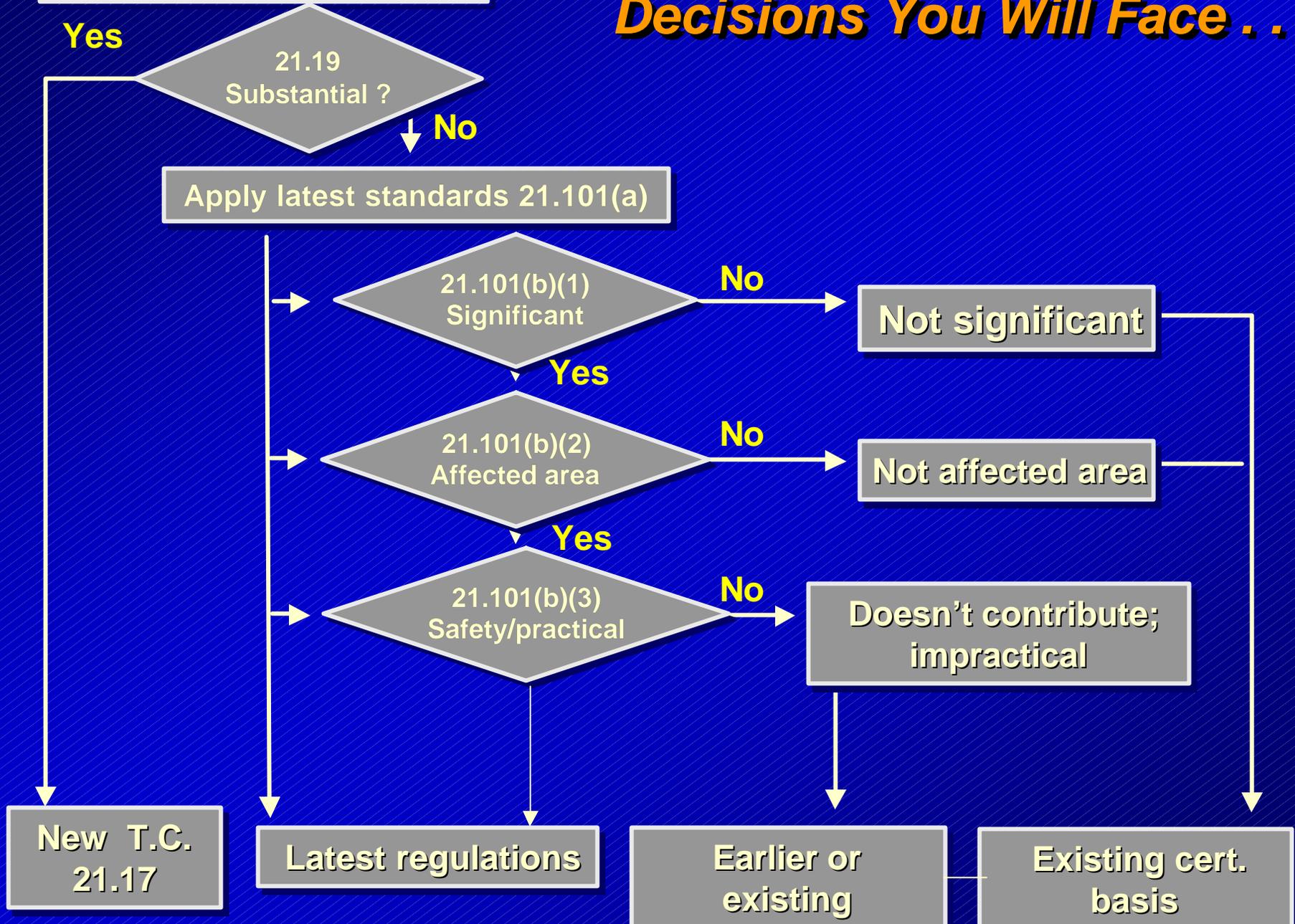
21.101(b)(3) determination indicates product meets and gets credit for an earlier amendment

21.101(b)(3) - *Impractical*

 **21.101(b)(3): *Impractical* if applicant substantiates that compliance with latest regulation would result in additional resource requirements not commensurate with gain in safety benefit**

Proposed Design Change

Decisions You Will Face . . .



Documenting Certification Basis

 **Order 8110.48**

 **Similar to TC**

 **Significant and not significant are treated the same.**

Questions



Thank You!

