WORK INSTRUCTION

Tonnage Oversight Reviews

Procedure Number: C3-04 Revision Date: 05/09/2024

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Purpose

To establish supplemental procedures for conducting oversight reviews on tonnage work performed by Authorized Measurement Organizations (AMOs); more broadly referred to as Responsible Organizations (ROs).

References

a. BP 10, latest revision, *Oversight Procedures*
b. MTN 04-03 as amended, *Technical Support and Oversight of Authorized Classification Societies*
c. MTN 01-98, as amended, *Tonnage Administrative Policy*
d. MTN 01-99, as amended, *Tonnage Technical Policy*
e. TG 4, latest revision, *Registered Dimensions Under Formal Systems*
f. WI C3-01, latest revision, *Generating Calculations and Certificates With TonCalc*
g. BP 11, latest revision, *Tonnage Correspondence Guidelines*

Attachments

1. Oversight Checklist, Administrative Review, 4 pgs
2. Oversight Checklist, Convention Tonnage Review
3. Oversight Checklist, Principle Dimensions Review
4. Oversight Checklist, Regulatory Tonnage Review
5. Guidance on Documenting Oversight Outcomes

Applicability

This Work Instruction applies to tonnage oversight reviews conducted by the Tonnage Division staff, and supplements the oversight procedures of reference (a). Refer to references (b) and (c) for related oversight requirements.

Responsibilities

Tonnage Division Chief:

- Ensure overall effectiveness of the tonnage oversight program.
- Discuss oversight outcomes with AMO managers, as appropriate.
- Sign and transmit oversight correspondence, as appropriate.
- Conduct peer reviews, as necessary.

Tonnage Oversight Manager:

- Select AMO tonnage work items and assign oversight reviews.
- Track selection rate of vessels by type, AMO, and other factors as needed.
- Verify required MASCOT administration, and filing actions.
- Perform duties of Staff Reviewer, as appropriate.
- Ensure AMO completion of required follow-up actions.

Tonnage Staff Reviewer:

- Conduct oversight and peer reviews, including drafting of correspondence.
- Identify to the Tonnage Oversight Manager any discrepancies encountered with oversight processes and tools, including *TonCalc* functionality, along with suggested areas for improvement.
- Discuss oversight outcomes with AMO counterparts.
- Transmit oversight correspondence.

Overview

The Tonnage Oversight Manager requests a vessel tonnage file for oversight review, which is assigned to a Tonnage Division reviewer upon receipt. Although the Oversight Manager is the primary reviewer, some oversight will be assigned to other division members based on workload. The reviewer examines the tonnage file, and verifies the tonnages, principal dimensions, and other information on the tonnage certificate(s), depending on the assigned activities. The reviewer enters any findings or other outcomes into draft correspondence, utilizing the established letter and enclosure format. Once signed, the correspondence is transmitted to the AMO, and any paper tonnage files are returned. The results are uploaded into MASCOT, which is used for unit-wide measures and to track required follow-up actions. In conjunction with this process, associated MISLE tonnage data is reviewed for correctness.

Make Oversight Selections

The Tonnage Oversight Manager makes tonnage oversight selections using a risk-based approach, and requests the corresponding tonnage file for oversight. Selections should be made within 30 days of the AMO's initial notification, and comprise 10% of the reported work, with a broad enough range of vessel types to ensure a statistically significant number of all sample groups are obtained during the yearly period. Typically, oversight reviews are not conducted on identical sister vessels, for which a review of the parent was previously conducted.

Conduct Oversight Review

Upon receipt of the tonnage file from the AMO, the Tonnage Oversight Manager determines the scope of the review, e.g. limit our oversight to an administrative review if the AMO only reissued a certificate for a name change and did not remeasure the vessel, and in consultation with the Tonnage Division Chief, assigns oversight to a tonnage reviewer and peer reviewer;. The tonnage reviewer performs the assigned review activities by examining the tonnage file for compliance with references (c) and (d), using the check lists of Attachments 1-4, the guidance for documenting oversight outcomes of Attachment 5 and references (e) and (f), then verifies results with the peer reviewer. In addition to the provisions of reference (a), observe the following:

(a) Assignment and Log-in. The assignment process includes logging the activity into MASCOT, setting up the electronic Project folder, and placing a copy of the forwarding correspondence and accompanying electronic documents in the folder. The folder is labeled using the MSC letter serial number and the vessel's name and identification number (e.g., "C3-1300175 MARMAC 302 (D1240683)").

(b) Outcomes Enclosure. Draft the preliminary findings into a correspondence letter enclosure. The Sharepoint folder search function may be used to identify similar findings from previous oversight reviews.

(c) Peer Review. The tonnage reviewer should confirm preliminary findings with a peer reviewer prior to engaging the AMO. When appropriate, validate questionable findings with the Tonnage Oversight Manager or Division Chief prior to engaging the AMO.

(d) AMO Engagement. The tonnage reviewer should feel free to contact the AMO at the appropriate level in order to clarify information about the project/vessel during the review. As appropriate, the Tonnage Oversight Manager should engage as needed. This is an informal exchange, as opposed to the outreach that occurs after the MSC has identified a finding and drafted the letter.

(e) MISLE Data Check. For documented vessels, the tonnage reviewer verifies correct MISLE tonnage certificate and data entry by the National Vessel Documentation Center (NVDC), including the assigned tonnages and dimensions. This check should be done for all oversight reviews, regardless of whether an Administrative Review (TTMA) activity is completed.

Prepare Oversight Letter

The tonnage reviewer drafts the oversight letter, and after peer review, presents it to the Tonnage Oversight Manager for review. If the letter includes findings, the Tonnage Oversight Manager discusses the draft letter with the Tonnage Division Chief.

Discuss Findings With AMO

Prior to oversight letter signature, the Tonnage Oversight Manager or Tonnage Division Chief, as appropriate, discuss all findings and corrective actions with AMO managerial counterparts. This is to ensure the finding and corrective action are appropriate, and we are not making an error. Take this opportunity to avoid having to rescind a letter of findings.

Issue and Close-Out Letter

Upon issuance of the oversight letter, the Tonnage Oversight Manager or Division Chief, as appropriate, transmits the letter per reference (g), and performs all close-out actions in the MASCOT. Observe the following:

(a) NVDC Close-Out. The Tonnage Oversight Manager contacts counterparts at the NVDC to advise them of any MISLE data entry deficiencies, such as Documentation errors or duplicate files.

(b) Filing. Retain electronic copies of AMO and MSC correspondence in the Project folder, along with electronic copies of documents, drawings, photos, and other supporting material that were used in the oversight review process. Include a copy of the letter in the Sharepoint "blues folder" for official unit correspondence..

Complete Follow-Up Actions

The Tonnage Oversight Manager monitors follow-up actions to ensure their timely completion, and maintains the status of follow-up actions in MASCOT. Note that the MASCOT data is reported out weekly in the Command Brief. Any paper tonnage files borrowed from the AMO should be returned via overnight express or similar method that allows for tracking/delivery confirmation.

Disclaimer

This document is intended to provide guidelines and other information for internal use by Coast Guard personnel and is not intended to, nor does it impose legally binding requirements on, any party outside the Coast Guard.

OVERSIGHT CHECK LIST
ADMINISTRATIVE REVIEW (TTMA)

Vessel Name:_____

Tonnage File

Verify Inclusion of Required Documents

- ☐ Profile and "amidships" drawings, with L_{OA}, L_{reg}, B_{reg} and D_{reg} shown
- ☐ Other supporting drawings/graphical representations
- ☐ Tonnage calculations for applicable measurement systems
- ☐ Application for Formal Measurement
- ☐ Copies of superseded tonnage certificates issued by same ACS
- ☐ Records for assigned draft and passenger count (Convention only)
- ☐ Tonnage drawing and related framing details (Regulatory only)
- ☐ Water ballast justification and approval letter (if WB > 30% GRT_{adj}) (Regulatory only)
- ☐ Tonnage Mark Certification documentation (Regulatory Dual Measurement only)

Convention Calculations

Verify Administrative Compliance

- ☐ Frame locations or equivalent specified for all dimensions (e.g., offsets or equivalent)
- ☐ IGES or STEP file included, if no offets or equivalent
- ☐ Copy of sister calculations included (if applicable)

Regulatory Calculations

Verify Administrative Compliance

- ☐ TonCalc format used
- ☐ Frame locations or equivalent specified for all dimensions
- ☐ All calculations shown (e.g., cannot specify a volume without a source)

US Certificate Front

Vessel Information

- ☐ **Number** ON, IMO or CG in this order of priority (e.g. ON 1222333, IMO 9320544 or CG 1269756)
- ☐ **Type** As specified in list under § 3.3(b)(3) of MTN 01-98, as amended
- ☐ **Builder** Name of individual, company or yard that constructed vessel
- ☐ **Hull Number** HIN if assigned; Bldr No. if no HIN; "None", Dash, or similar if none/not available
- ☐ **Built** Town, State (abbrev) if US ; Town, State/Region/Province and Country(no abbrev) if foreign
- ☐ **Propulsion** Self-propelled (including sail power); or non-self-propelled
- ☐ **Date** If in 1982 or 1994, complete date; otherwise, year only. Also, date if altered (e.g. "1981/1992")

Length, Breadth, Depth

- ☐ "X" in appropriate box (Convention, Overall or Pre-1990)
- ☐ Overall length specified in all cases (breadth/depth blank, unless these are registered dimensions)
- ☐ All feet in tenths, meters in hundredths and meters agree with feet
- ☐ Dimensions transcribed properly from calculations/drawings

Gross Tonnage / Net Tonnage

- ☐ No decimals
- ☐ Tonnages transcribed properly from calculations, and correct Subpart

Signature block

- ☐ Certificate signed

US Certificate Reverse

Vessel assigned Convention tonnage?

☐ Yes. Continue with next item in checklist below

☐ No. Skip to **Measurement History** section

Spaces Included in Tonnage (Convention only)

☐ Underdeck location and length dashed

☐ All other spaces listed with frame location (or equivalent) and length

☐ Lengths to hundredths of meters

☐ Asterisk if enclosed space includes excluded space

☐ On older forms, excluded spaces block must list excluded spaces

☐ Number of passengers agrees with MISLE, and matches calculations; zero or similar if none

☐ Molded draft in hundredths of meters, and matches calculations

Measurement History

☐ Original measurement: ALWAYS completed (e.g. Jan 10, 1993 at St. Louis, MO or Victoria, Canada)

☐ Remeasurement: must be completed if vessel remeasured multiple times.

Remarks (only authorized remarks, as applicable)

☐ If ITC69 issued: "International Tonnage Certificate (1969) issued for this vessel."

☐ If US Cert reissued, reason is given. Examples:

- "Certificate reissued to reflect addition of new deck structure."
- "Certificate reissued to replace lost original."
- "Certificate reissued to correct error in net tonnage."
- "Certificate reissued to reflect issuance of International Tonnage Certificate (1969)"

☐ Great Lakes restrictions: "Assigned tonnage valid for Great Lakes voyages only."

☐ Portable Enclosed Spaces: "Assigned tonnages include YYYYY . . . located FR ZZZZZ."

☐ Water Ballast > 30%: "Water ballast in excess of 30%…..valid for XXXXX service only."

☐ Vessel Not Issued US Cert: "A U.S. Tonnage Certificate was not . . . . ."

☐ Dual Measurement:

- One deck: "Vessel measured as single deck….of the uppermost complete deck."
- Two deck (single low tonnage): "Tonnage mark and Load Line...provisions of 46 CFR 69.179."
- Two decks (high/low tonnage) : "Tonnage mark is assigned…..provisions of 46 CFR 69.179."

☐ IMO No. assigned (optional remark): "IMO Number is XXXXXXX."

☐ Vessels ≥ 24 Meters / < 79 Feet - “For vessels that are 24.0 meters . . . . expressed in English units.”

ITC69 Front

Eligibility for ITC69

☐ Convention length >= 79.0 feet

Distinctive Number (one of following, in order of priority listed)

☐ IMO, ON, CG in this order of priority (e.g. ON 1222333, IMO 9320544 or CG 1269756)

Keel Laid/Altered Date

☐ If in 1982 or 1994, complete date; otherwise, year only

Main Dimensions (Length, Breadth, Molded Depth)

☐ All feet in tenths, meters in hundredths, and meters roughly agree with feet

☐ Annotation if novel craft dimensions used

☐ Dimensions transcribed properly from calculations/drawings

ITC69 Front (contd)

Gross Tonnage / Net Tonnage

- ☐ No decimals
- ☐ Tonnages transcribed properly from calcs

Signature

- ☐ Certificate signed

ITC69 Reverse

Spaces Included in Tonnage

- ☐ Underdeck location and length are dashed
- ☐ All other spaces listed with frame location (or equivalent) and length
- ☐ All lengths to hundredths of meters
- ☐ Asterisk if enclosed space includes excluded space
- ☐ On older forms, excluded spaces block must list excluded spaces
- ☐ Number of passengers agrees with MISLE, and matches calculations: zero or similar if none
- ☐ Molded draft in hundredths of meters, and matches calculations

Measurement History (refers only to Convention measurement)

- ☐ Original measurement: ALWAYS completed: e.g. Jan 10, 1993 at St. Louis, MO or Victoria, Canada
- ☐ Remeasurement: must be completed if vessel remeasured multiple times

Remarks (only authorized remarks, as applicable)

All Vessels

- ☐ Overall length defined under Subpart E is XXXX m (YYYY ft)
- ☐ Vessel built by XXXX (if available)
- ☐ Hull number is YYYY (if available)
- ☐ Official number is ZZZZ (if available and not on front of certificate)

As applicable

- ☐ If ITC69 reissued, reason given: see checklist for US Cert above for examples.
- ☐ If GRT grandfathering applied, check date block on front to ensure eligibility:
  - Date on/before 18 July 1982 "The ship is remeasured according to Article 3(2)(d) . . . . GROSS TONNAGE . . . is ZZZZZ RT, according to the regulations of . . . ."
  - Date after 18 July 1982 "The ship is additionally measured according to [IMO Resolution YYYY] . . . GROSS TONNAGE . . . is ZZZZZ RT, according to the regulations of . . . ."
- ☐ Dedicated Clean Ballast Tanks: "This ship carries . . . clean ballast water: ZZZZZZ."
- ☐ Temporary Deck Equipment: "Assigned tonnages include YYYYY . . . located FR ZZZZZ."
- ☐ Vessel Not Issued US Cert: "A U.S. Tonnage Certificate was not . . . tonnages and dimensions."
- ☐ Reduced Gross Tonnage Segregated Ballast: "The segregated ballast . . . is YYYY. . . is ZZZZ."
- ☐ Reduced Gross Tonnage Open-Top Containerships: "In accordance with IMO . . . is ZZZZZ"

MISLE

Verify Data Entered in MISLE

- ☐ Measurement organization
- ☐ Dimensions
- ☐ COD indicator
- ☐ Gross/Net Tonnage

Comments:

OVERSIGHT CHECK LIST CONVENTION TONNAGE REVIEW (TTMC)

Vessel Name:_____

Vessel Geometry	**Verify Geometry (e.g., use photos, approved plans etc.)**
	☐ Hull shape and configuration properly represented
	☐ Appendages accounted for
	☐ Large superstructure spaces included
	☐ Small superstructure spaces included, as appropriate
	☐ Cargo spaces included, as appropriate
Excluded Spaces	**Check Eligibility of Excluded Spaces**
	☐ Covered spaces meet opening criteria
	☐ Uncovered spaces meet side height restrictions
	☐ Securing devices absent in all spaces
Calculations	**Check Calculation Inputs**
	☐ Hull principal dimensions correct
	☐ Large superstructure principal dimensions correct
	☐ Small superstructure dimensions correct, on sampling basis
	☐ Cargo space dimensions correct, on sampling basis
	☐ Passengers properly accounted for
	☐ Molded depth and draft correct
Tonnage Assignment	**Verify Calculated Tonnages**
	☐ GT and NT properly calculated and rounded down
	☐ GT comparable to estimate (e.g., $0.7*L_{reg}B_{reg}D_{reg} + Vol_{DkHse}$= 161.5 GT^0.9691 units of ft))
	☐ NT comparable to estimate (e.g., NT = 0.3 GT or greater)
	☐ Overall length >= 79.0 ft (otherwise, ineligible)
Certificate Information	**Verify Space and Tonnage Information**
	☐ Enclosed space locations and lengths correct
	☐ Excluded spaces properly identified
	☐ Cargo space locations and lengths correct (if applicable)
	☐ GT and NT match values in calculations

Comments:

OVERSIGHT CHECK LIST
PRINCIPAL DIMENSIONS REVIEW (TTMD)

Vessel Name:_____

Vessel Characteristics	**Verify Profile and Section Drawing Against Photos / Other Information**
	☐ Hull profile agrees with photos, computer model, lines plan, etc.
	☐ “Amidships” section agrees with photos, computer model, lines plan, etc.
	☐ Bulwark/hull openings identified that could influence length measurements
	☐ Rudder stock location verified
	☐ Scaling of applicable drawings/photos verified
Overall Length	**Verify Certified Value**
	☐ 10% criterion for bulwark openings properly applied
	☐ Termination points correct
	☐ Overall length cross-checked against hull offsets
	☐ Overall length correct
Registered Length	**Verify Certified Value**
	☐ 85% waterline correct with vessel trimmed on design waterline
	☐ Criteria for ignoring certain deck discontinuities correctly applied
	☐ Termination points correct
	☐ Registered length correct
Registered Breadth	**Verify Certified Value**
	☐ Section at correct location (“amidships” of the registered length)
	☐ Termination points correct
	☐ Registered breadth cross-checked against hull offsets
	☐ Registered breadth correct
Registered Depth	**Verify Certified Value**
	☐ Termination points correct
	☐ Registered depth cross-checked against profile drawing depth
	☐ Registered depth correct
Molded Draft	**Verify Certified Value**
	☐ Cross-check against profile drawing draft
	☐ Molded draft correct

Comments:

OVERSIGHT CHECK LIST REGULATORY TONNAGE REVIEW (TTMR)

Vessel Name:_____

Vessel Geometry	**Verify Geometry (e.g., use photos, approved plans etc.)**
	☐ Hull shape and configuration properly represented
	☐ Large superstructure spaces included
	☐ Small superstructure spaces included, as appropriate
	☐ Line of the uppermost complete deck properly established
	☐ Line of the tonnage deck properly established
	☐ Open vessel criteria properly applied, as appropriate
Tonnage Drawing	**Verify Accuracy**
	☐ Tonnage length correct
	☐ Ordinary frames used as basis for measurements correct, at all stations
	☐ Breadth and depth measurements correct, on sampling basis
Under-Deck Calculations	**Check Calculation Inputs**
	☐ Dimensions properly transcribed from tonnage drawing
	☐ Water ballast space exemption correct, if applicable
	☐ Eligibility of deducted spaces verified
	☐ Calculation methodology correct (e.g., Simpson's vs. rectangular?)
Above-Deck Calculations	**Check Calculation Inputs**
	☐ Dimensions verified against drawings, photos, etc.
	☐ Eligibility of exempted spaces verified
	☐ Eligibility of deducted spaces verified
	☐ Calculation methodology correct
Tonnage Assignment	**Verify Calculated Tonnages**
	☐ GRT and NRT properly calculated and rounded down
	☐ GT comparable to estimate (e.g., evaluate exemptions on TonCalc summary)
	☐ NT comparable to estimate (e.g., evaluation deductions on TonCalc summary)
Certificate Information	**Verify Tonnage Information**
	☐ GRT and NRT properly transcribed

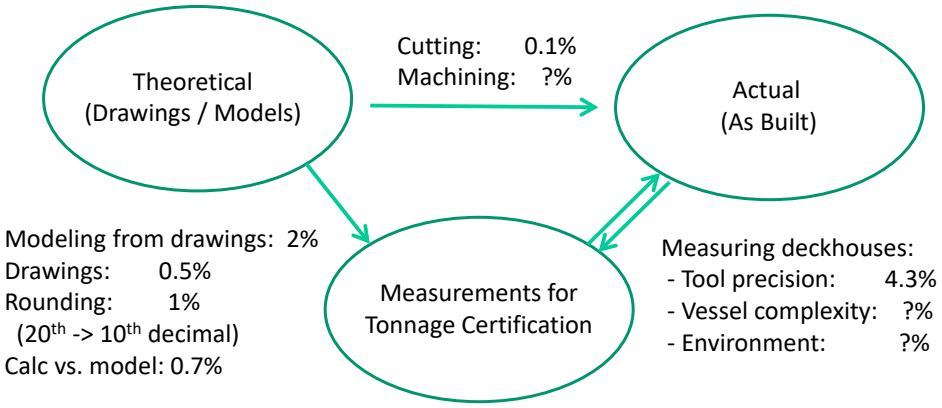
Comments:

GUIDANCE ON DOCUMENTING OVERSIGHT OUTCOMES

1. Introduction. MTN 01-98, as amended, allows considerable latitude in categorizing oversight findings stemming from measurement errors, and assessing whether tonnage certificate reissuance is required. This attachment provides general guidance on this subject to help foster a more robust and consistent process for assessing ACS performance, while avoiding unnecessarily burdensome ACS corrective actions.

2. Minor Deficiencies. Unlike ACS plan approval on the Coast Guard's behalf, the tonnage certification process involves a large amount of ACS "original work" as opposed to "review work", with multiple opportunities for errors to be introduced which are difficult to detect through normal ACS internal review processes.[1] Further, the tonnage statute recognizes that there may be errors in the tonnage measurement process, which if confirmed, require correction only to the "extent necessary" (see 46 U.S.C. § 14304), and provides for remeasurement following changes only if the vessel or its spaces are changed in a way that "substantially affects it tonnage" (see 46 U.S.C. § 14504(a)(2)). This argues against characterizing minor deficiencies of questionable significance as nonconformities, unless they are indicative of Quality Management System failures that should be brought to ACS management attention.

3. Tolerances and Precision. The tolerances and precision of ACS measurements must be taken into account when deciding whether a minor deficiency related to an incorrect measurement or the improper accounting of spaces is a nonconformity, since the fundamental issue is how closely the information that appears on the certificate matches the vessel's as-built configuration. Always give the ACS the benefit of the doubt ("if in doubt, leave it out").[2]



[1] See the related discussion in the MSC's 2016 Third Party Oversight Report (MSC letter Serial C0-1702300 dated 04Aug2017).

[2] The information in this paragraph was drawn from a 2016 presentation at a Tonnage Division offsite conference (P013767): differences between drawing and as-built dimensions could easily be on the order of 1% to 3%, with differences between calculated volumes from these drawings and as-built volumes on the order of 3% to 5%. See also the MSC Technical Report on the EL FARO (MSC letter Serial A0-1700861 dated 22Mar2017) for information on ship construction tolerances, changes due to environmental factors, and tolerance stack-up analysis.

The general thresholds for oversight review are as follows, but may be adjusted as previously discussed:

a. Main Dimension Error (e.g. Overall Length)

Ignore $L_{err} < 1\%$ (or 1 foot, whichever is less)

NC $1\% \leq L_{err} < 2\%$

Maj NC $2\% \leq L_{err}$

b. Tonnage Errors. This refers to an independent volume that is measured separately from other such volumes, when determining the total volume of the vessel. Differences in volume due to alternate acceptable measurement methods (e.g. trapezoidal vs. Simplson's first rule) should be taken into account and not considered an error.

Ignore $Ton_{err} < 1\%$

NC $1\% < Ton_{err} < 5\%$

Maj NC $5\% \leq Ton_{err}$

Note that consideration for measurement tolerances and methods do not come into play if wrong dimensional criteria or an unacceptable method were used by the AMO.

4. Consolidating Nonconformities. Consolidate similar deficiencies as a single nonconformity, where possible. This helps avoid unnecessarily lengthy oversight letters, lends itself to using examples of identified deficiencies rather than having to develop a comprehensive listing of individual deficiencies, and facilitates summarizing results for the purpose of better informing ACS management.

5. Categorizing Nonconformities as Major. Refer to § 4.2(d) of the MTN for information on categorizing nonconformities as major. Carefully consider safety and other impacts before categorizing a measurement error or other deficiency as a major nonconformity. For example, an error in a vessel's overall or registered length has a potentially greater regulatory impact than an error of the same magnitude in the vessel's registered breadth.

6. Certificate Reissuance. Certificate reissuance is generally reserved for correcting nonconformities which clearly affect the validity of the associated tonnage certificate(s). For example, a major nonconformity in assigned tonnages or dimensions (i.e., overall length and registered length, breadth, and depth) necessitates its reissuance, whereas a nonconformity in the location of a cargo space specified on the reverse of the certificate generally does not. Considerable judgement must be exercised when requiring certificate reissuance for nonconformities not categorized as major. As a general rule, if the vessel could be modified in a manner consistent with the error without the need for remeasurement, certificate reissuance should be at the ACS's discretion per § 4.2(f) of the MTN.