



Accreditation Body Evaluation Procedure for AASHTO R18 Accreditation

Final – August 9, 2016

Table of Contents

Section Number	Title of Section
<u>0</u>	<u>Purpose</u>
<u>1</u>	<u>Scope</u>
<u>2</u>	<u>References</u>
<u>3</u>	<u>Objectives</u>
<u>4</u>	<u>Criteria</u>
<u>4.1.3</u>	<u>Supplementary Accreditation Body Requirements</u>
<u>4.1.4</u>	<u>Proficiency Testing Requirements</u>
<u>4.1.5</u>	<u>Measurement Traceability Requirements</u>
<u>4.1.6</u>	<u>Uncertainty of Measurement Requirements</u>
<u>4.1.7</u>	<u>Construction Materials Testing Accreditation Requirements</u>
<u>5</u>	<u>Equipment for Verification Checks</u>
Appendix A	Documents to be Submitted to NACLA by Applicants for NACLA Evaluation
Appendix B	Flowcharts for the NACLA Evaluation Procedure

0. Purpose

The purpose of this document is to establish the procedure used by NACLA to evaluate Accreditation Bodies (ABs). This procedure is based on an evaluation of ISO/IEC 17011 with additional Sector Specific Technical Requirements for AB's providing accreditation to laboratories for AASHTO R18. This procedure creates a mechanism for establishing the equivalence of the operation of construction material testing laboratory accreditation programs, with the effect that laboratories accredited by such bodies will be considered to have met the same technical requirements for competence.

This procedure will provide for necessary confidence building opportunities through active participation of regulatory agencies, industry, and others that have the need to build confidence in AB's.

1. Scope

- 1.1 This evaluation procedure will be used by NACLA for the evaluation, and re-evaluation of laboratory AB's, the operation of their recognized accreditation schemes, and acceptance of data from their accredited laboratories.
- 1.2 When an AB submits an application to NACLA, it agrees to abide by the procedures published by NACLA and promote the NACLA mission and vision.
- 1.3 Accreditation is defined in ISO/IEC 17011 as third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks. Assessment includes quality system and documentation review as well as on-site assessment of technical competence. Accreditation is granted for the specific tests/calibrations that are documented in the Scope section of a Letter of Accreditation issued by an independent third party.
- 1.4 The scope of the construction materials testing (CMT) field, as described in this document, includes the following materials areas: concrete and aggregates, cement, soils, bituminous materials, roofing materials, masonry, steel and non-destructive tests related to construction. Accreditation may be offered for one or more tests in each area. Additional areas may be added upon request. As an option, a laboratory may also obtain accreditation for one or more of the following construction materials engineering standards:

ASTM E329	Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
ASTM C1077	Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM D3666	Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D3740	Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soils and Rock as Used in Engineering Design and Construction
ASTM C1093	Practice for Accreditation of Testing Agencies for Masonry
ASTM E1212	Practice for Quality Management Systems for Nondestructive Testing Agencies
ASTM E543	Specification for Agencies Performing Nondestructive Testing
ASTM A880	Practice for Criteria for Use in Evaluation of Testing Laboratories and Organizations for Examination and Inspection of Steel, Stainless Steel and Related Alloys

- 1.5 When accredited the laboratory's scope of accreditation shall indicate "Construction Materials Testing".

2. References

NACLA Accreditation Body Evaluation Procedure

ISO/IEC 17011:2004, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*

AASHTO R18 Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories

NISTIR 7012, Technical Requirements for Construction Materials Testing

ISO/IEC 17025:2005, *General requirements for the competence of calibration and testing laboratories*

ISO/IEC 17043:2010, *Conformity Assessment – General requirements for proficiency testing*

ILAC P10, *ILAC Policy on Traceability of Measurement Results*

ISO Guide for the Expression of Uncertainty in Measurement (GUM)

3. Objectives

3.1 The stated objective of NACLA's evaluation procedure is to establish stakeholder confidence in the reports and certificates issued by laboratories accredited by NACLA recognized ABs. The objectives of an evaluation shall be to establish confidence:

3.1.1 That the AB conducts its assessments and accreditations in accordance with the requirements given in ISO/IEC 17011 and other requirements established by NACLA.

3.1.2 That the laboratories accredited by the AB fully meet the requirements for accreditation as stated in AASHTO R18, and as specified by the AB;

3.1.3 That a laboratory accredited by the AB follows all elements of the required standards, relevant regulatory requirements and/or contract requirements needed to obtain accredited status.

3.1.4 That the AB ensures the competence of accredited laboratories.

3.2 The evaluation shall include the following:

3.2.1 An appraisal of the documented policies and procedures of the AB as set out in its quality manual and associated documentation;

3.2.2 An appraisal of the documented policies and procedures on traceability routes and measurement uncertainty as well as participation in Proficiency Testing Activity;

3.2.3 An on-site evaluation of the implementation of these policies and procedures; and

3.2.4 An evaluation of the AB's ability to accredit laboratories, including an appraisal of whether the AB obtains sufficient evidence that their laboratories are technically competent to perform the work for which they have been accredited.

4 Criteria

4.1 The following criteria shall apply to all ABs:

4.1.1 The AB in developing and implementing its accreditation program shall follow the requirements in the NACLA Evaluation Procedure and ISO/IEC 17011. This section defines both general and specific requirements for the application of ISO/IEC 17011 to ABs in the CMT field to AASHTO R18.

4.1.2 It is understood that some ABs may need to operate in accordance with additional requirements or specifications (e.g., specific industry requirements, requirements mandated by law or contract.)

4.1.3 Supplementary Accreditation Body requirements for applicants (initial and renewal) are:

4.1.3.1 Be fully operational (i.e., having carried out surveillance and reassessment);

4.1.3.2 Neither offer nor provide, directly, any conformity assessment service covered by any ILAC or IAF arrangements. This does not preclude related bodies from providing conformity assessment services subject to the conditions of 4.1.3.4.

Note 1: The word "directly" is inserted to make clear that, under the direction of the AB management; no conformity assessment activity should be undertaken;

Note 2: ISO/IEC 17011 defines a conformity assessment body (CAB) as "a body that performs conformity assessment services and that can be the object of accreditation." Possible examples of CABs are: laboratories, inspection bodies, Quality Management System (QMS) certification bodies, product certification bodies, Environmental Management Systems (EMS) certification bodies, and personnel certification bodies.

4.1.3.3 Ensure that activities of related bodies do not affect the confidentiality, objectivity or impartiality of its accreditation operations.

4.1.3.4 Ensure that the laboratory AB and any related body are effectively separate with respect to management and decision-making, and shall not have the same name or logo mark. The laboratory AB shall ensure that there is adequate market place distinction between the accreditation program being evaluated by NACLA and other accreditation activities. These distinctions shall include the following:

- 4.1.3.4.1 Separate AB names;
- 4.1.3.4.2 Separate symbols issued to laboratories;
- 4.1.3.4.3 Separate guidance on the use of the symbols;
- 4.1.3.4.4 Separate lists of accredited laboratories; and
- 4.1.3.4.5 Separate certificates of accreditation.

4.1.4 Proficiency Testing Requirements

4.1.4.1 The AB shall have a policy or procedure for the requirements of proficiency testing.

4.1.4.2 An AB being evaluated for testing shall demonstrate the technical competence of its accredited laboratories by their satisfactory participation in proficiency testing activity where such activity is available. The minimum amount of appropriate proficiency testing required per laboratory is:

- 4.1.4.2.1 One activity prior to gaining accreditation;
- 4.1.4.2.2 Annual participation in the applicable proficiency testing programs for the tests included in their scope of accreditation.

Note 1: Appropriate proficiency testing activity includes international or national inter-laboratory comparisons or measurement audits run or approved by the AB itself.

Note 2: An AB should use proficiency testing programs which comply with the operational procedures detailed in ISO/IEC 17043.

4.1.4.3 An AB shall fully document its policies and procedures in relation to the selection and use of proficiency testing programs (refer to ISO/IEC 17043, and the requirements of applicable ILAC documents.)

4.1.4.4 An AB shall demonstrate that the proficiency testing its accredited or applicant laboratories undertake is effective and linked to the assessment process and that appropriate corrective action is carried out.

4.1.4.5 When NACLA runs proficiency testing programs or inter-laboratory comparisons (ILCs), every applicant AB whose evaluation scope includes the subject testing shall nominate laboratories to participate, as far as available and practicable.

4.1.4.6 If the AB operates a proficiency testing program in its own right the AB shall fully document the criteria for the selection, organization and use of its PT program.

4.1.4.7 If other organizations operate mandatory proficiency testing or inter-laboratory comparisons for the AB, the evaluation team shall include discussions with such external organizations or examine the AB's procedures to determine whether they are consistent with the provisions of ISO/IEC 17043.

4.1.4.8 The AB shall require applicants under Construction Materials Testing to participate in all the available proficiency testing programs for the tests included in their scope of accreditation. Enrollment in the programs related to a laboratory's scope of accreditation satisfies this requirement.

4.1.4.9 The AB shall require its accredited laboratories to promptly investigate and determine the cause(s) for any proficiency testing results beyond 2.0 standard deviations of the grand average (i.e. z scores greater than 2.0) and any occurrences of nonparticipation to correct any problems identified, and to report to the AB.

4.1.5 Measurement Traceability Requirements

4.1.5.1 The AB shall have a policy or procedure for the requirements of measurement traceability.

4.1.5.2 It is a fundamental requirement of AASHTO R18 that, wherever applicable, all measurements made in a testing laboratory shall be traceable to national or international standards of measurement where available. The AB shall establish whether or not this requirement is being satisfied and that the measurements performed have an appropriate uncertainty. The AB shall check whether full and proper use is being made of competent calibration laboratories by its applicant and accredited laboratories.

4.1.5.2.1 This requirement should wherever possible, be satisfied by the use of either:

4.1.5.2.1.1 a calibration laboratory accredited by an AB recognized by NACLA;

4.1.5.2.1.2 a calibration laboratory accredited by an AB recognized by ILAC or an ILAC-recognized region; or

4.1.5.2.1.3 a National Metrology Institute.

4.1.5.2.2 When no such calibration laboratories exist, the AB must examine arrangements used by the laboratory in detail to ensure compliance with the requirements of AASHTO R18. When traceability to national or international standards of measurement is not applicable, the evaluation team shall check that laboratories are required to provide satisfactory evidence of correlation or accuracy of test results (for example, by participation in a suitable program of inter-laboratory comparisons, original equipment manufacturers where accredited services are not available, by the use of reference materials that are traceable to national or international standard reference materials, etc.).

4.1.6 Uncertainty of Measurement Requirements

4.1.6.1 The AB shall have a policy or procedure for the requirements for the uncertainty of measurement.

4.1.6.2 The AB shall establish whether or not this requirement is being satisfied, that the measurements performed have an appropriate measurement uncertainty, and that appropriate calibration and measurement capabilities are assigned and published on scopes of accreditation.

4.1.6.3 The AB shall evaluate how traceability of measurement and associated estimates of measurement uncertainty are established wherever applicable in accordance with the provisions of the *ISO Guide for the Expression of Uncertainty in Measurement* or equivalent.

4.1.7 Construction Materials Testing Accreditation Requirements

4.1.7.1 In addition, the following requirements shall also apply.

4.1.7.2 Quality Manual

4.1.7.2.1 The AB shall, at a minimum, hold annual meetings with all assessors in the appropriate construction/test area to discuss complaints, inconsistencies in assessments, changes in procedures, etc.

4.1.7.3 Assessment

4.1.7.3.1 The assessor shall verify that the laboratory has the appropriate equipment, calibration and verification records, test procedures, and trained personnel to perform every procedure in the proposed scope.

4.1.7.3.2 The assessor shall observe a complete demonstration of each test on the scope adequate to assure the assessor can attest to the technical competence for the laboratory. The assessor shall use check-lists to record all findings. The assessor shall assure that all tests are performed to a documented test procedure. Test procedures shall be performed with applicable materials.

4.1.7.3.3 The AB shall verify that the laboratories' testing equipment used in the test procedures meet the standards. The AB shall either own all the appropriate equipment for this verification or have a third party provide the equipment. A recommended list of equipment can be found in Section 5. The assessor has the option of either verifying the test equipment him/herself or observing laboratory personnel verify the test equipment with the equipment that is owned or controlled by the AB. This program shall ensure that the measurements made are traceable to the International System of Units (SI) or if appropriate a consensus standard.

4.1.7.4 Surveillance and Reassessment of Accredited Laboratories

4.1.7.4.1 The AB shall evaluate a laboratory's status at least annually. The annual evaluation shall at a minimum take into consideration the laboratory's performance in proficiency testing programs.

5 Equipment for Verification Checks

Several of the checklists for construction materials tests require assessors to perform verification checks of laboratory equipment. The following list includes recommended equipment for performing those checks. This list is not considered mandatory or exhaustive. The AB is responsible for ensuring that the appropriate equipment is used for each verification, and that it is appropriately calibrated

5.1 Equipment

Calipers

Feeler Gauges

Gage Blocks

Pocket Optical Comparator

Masses

Temperature Measuring Device

APPENDIX A DOCUMENTS TO BE SUBMITTED TO NACLA BY APPLICANTS FOR NACLA EVALUATION

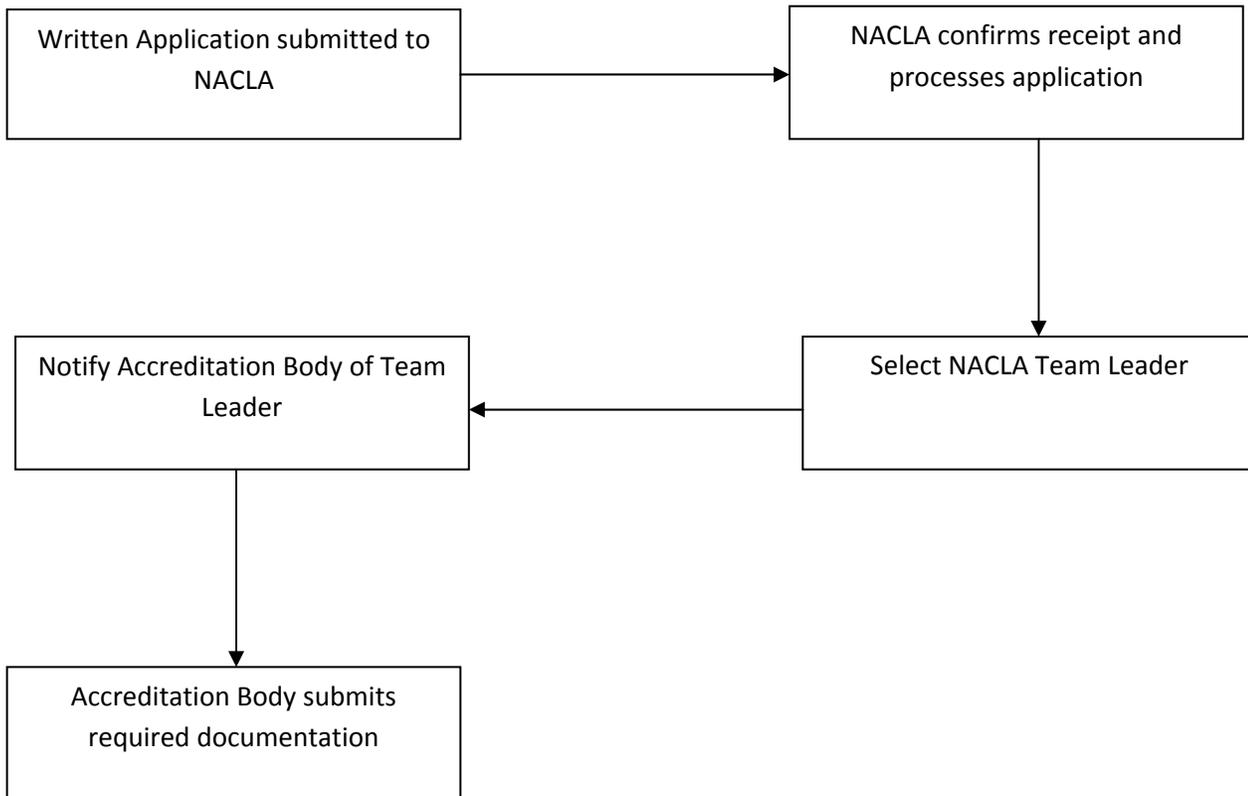
(NOTE: The application will be evaluated by NACLA and the applicant will be contacted with further information to proceed for potential recognition. Once an application is accepted by NACLA the applicant will be asked to submit electronically their documentation as defined below in items 2 through 16:

1. Completed Application Form, applicable fee and when approved:
2. The Accrediting Body's (AB) Quality Manual, in which the policies and procedures of the AB and the responsibility for implementation of the quality system are clearly designated (see also ISO/IEC 17011).
3. Full details of the staffing of the AB, including their backgrounds and length of experience in conformity assessment bodies (CABs), if not given in the Quality Manual.
4. All accreditation criteria and associated technical criteria required by the AB for the evaluation of a CAB.
5. All criteria published, including formal rules or regulations affecting the AB's operation and the responsibilities and obligations of its accredited CABs.
6. A document giving a clause-by-clause cross-referencing of the AB's compliance with each section of the requirements of ISO/IEC 17011, their CAB requirements and documents with applicable standards, including the requirements as defined above in this evaluation procedure.
7. The AB's policy for the applicable requirements to which they are assessing the CAB's.
8. Relevant guidance documents published by the AB that may be used by the CAB to be accredited to AASHTO R18.
9. The AB's policy on the surveillance and re-assessment of the accredited or applicant CAB.
10. Any other documentation that describes the mechanics of operation of the AB's accreditation system, including annual reports, questionnaires, newsletters, etc.
11. A copy of the AB's Directory or other listings providing the name and scope of accreditation of each CAB accredited by the AB.
12. Detailed scopes of accreditation and draft scopes of accreditation of all CABs to be visited during the pre-evaluation or evaluation visits.
13. Organizational charts describing the AB and its relationships with any other related organizations.
14. Descriptions of any separate functions or affiliations of the AB for activities other than accreditation (such as product certification, standards writing, and management system registration).
15. Details of any formal agreement or recognition to which the AB is party either nationally or internationally, including government authorities, private sector organizations, other accreditation systems, and any programs operated for other private or government agencies.
16. Reports on any relevant recent evaluations carried out by other 2nd and 3rd party organizations.

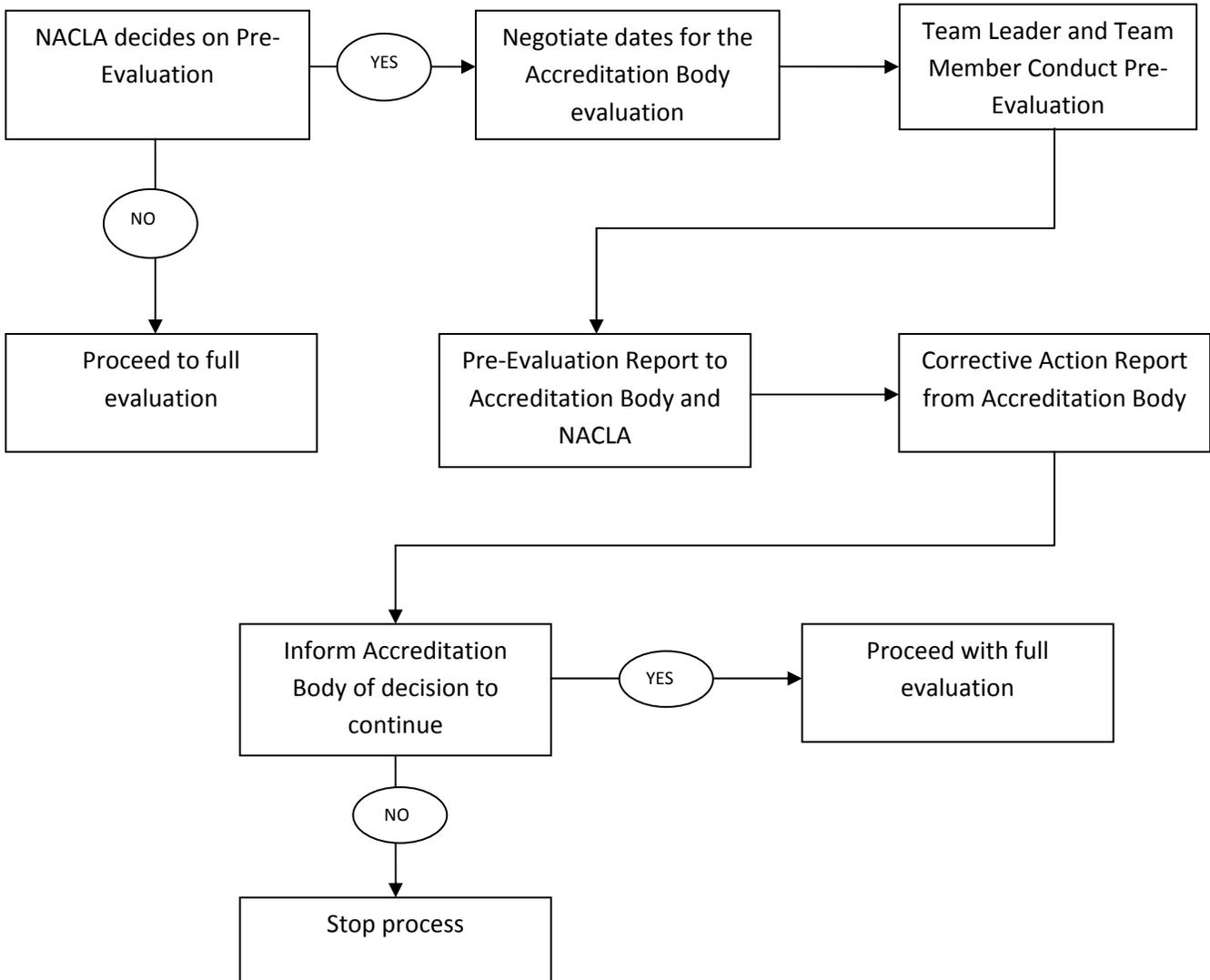
APPENDIX B FLOWCHARTS FOR THE NACLA EVALUATION PROCEDURE

Flow charts of the Application, Pre-evaluation, Evaluation and Corrective Action Processes are found on the following pages.

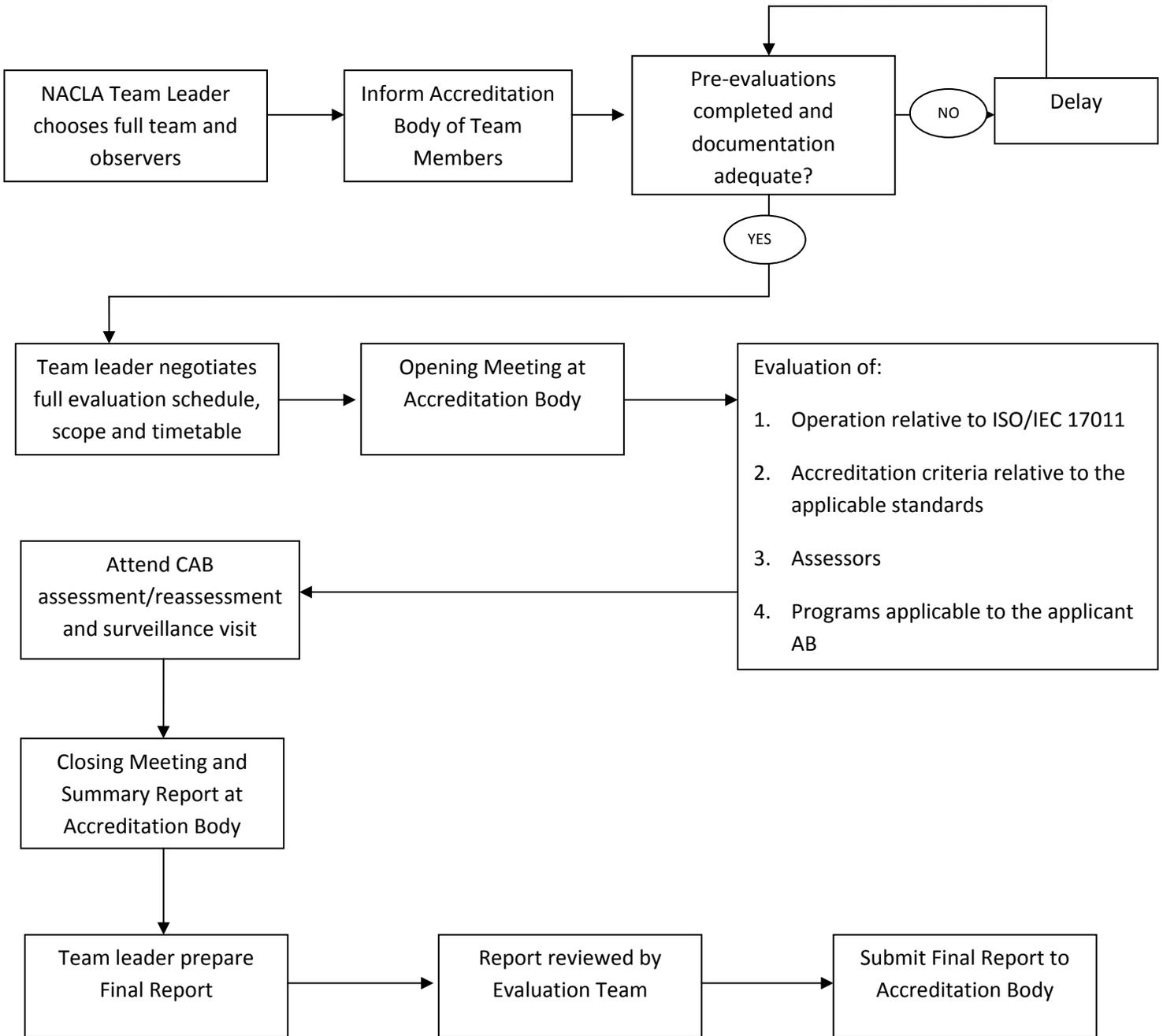
Application Process



Pre-Evaluation Process



Evaluation Process



Corrective Action Process

