

APPENDIX A
NATIONAL BRIDGE INSPECTION STANDARD

Excerpts from the Code of Federal Regulations
23 Highways - Part 650
Subpart C National Bridge Inspection Standards (NBIS)

§650.301 Application of Standards.

The National Bridge Inspection Standards (NBIS) in this part apply to all structures defined as bridges located on all public roads. In accordance with the AASHTO (American Association of State Highway and Transportation Officials) Transportation Glossary, a “bridge” is defined as a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 6.1 m (20 feet) between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

§650.303 Inspection Procedures.

(a) Each highway department shall include a bridge inspection organization capable of performing inspections, preparing reports, and determining ratings in accordance with the provisions of the AASHTO Manual¹ and the Standards contained herein.

(b) Bridge inspectors shall meet the minimum qualifications stated in §650.307.

(c) Each structure required to be inspected under the Standards shall be rated as to its safe load-carrying capacity in accordance with Section 4 of the AASHTO Manual. If it is determined under this rating procedure that the maximum legal load under state law exceeds the load permitted under the Operating Rating, the bridge must be posted in conformity with the AASHTO Manual or in accordance with state law.

(d) Inspection records and bridge inventories shall be prepared and maintained in accordance with the Standards.

(e) The individual in charge of the organizational unit that has been delegated the responsibilities for bridge inspection, reporting, and inventory shall determine and designate on the individual inspection and inventory records and maintain a master list of the following:

¹ The AASHTO Manual referred to in this part is the “Manual for Maintenance Inspection of Bridges” (1983) together with subsequent interim changes or the most recent version of the AASHTO Manual published by the American Association of State Highway and Transportation Officials. A copy of the Manual may be examined during normal business hours at the office of each Division Administrator of the Federal Highway Administration, at the office of each Regional Federal Highway Administrator, and at the Washington Headquarters of the Federal Highway Administration. The addresses of those document inspection facilities are set forth in Appendix D to Part 7 of the regulations of the Office of the Secretary (40 CFR Part 7). In addition, a copy of the Manual may be secured upon payment in advance by writing to the American Association of State Highway and Transportation Officials, 444 N. Capitol Street NW, Suite 225, Washington, DC 20001.

(1) Those bridges that contain fracture critical members, the location and description of such members on the bridge, and the inspection frequency and procedures for inspection of such members. (Fracture critical members are tension members of a bridge whose failure will probably cause a portion of or the entire bridge to collapse.)

(2) Those bridges with underwater members which cannot be visually evaluated during periods of low flow or examined by feel for condition, integrity, and safe load capacity due to excessive water depth or turbidity. These members shall be described, the inspection frequency stated, not to exceed 5 years, and the inspection procedure specified.

(3) Those bridges which contain unique or special features requiring additional attention during inspection to ensure the safety of such bridges and the inspection frequency and procedure for inspection of each such feature.

(4) The date of last inspection of the features designated in paragraphs (e)(1) through (e)(3) of this section and a description of the findings and follow-up actions, if necessary, resulting from the most recent inspection of fracture critical details, underwater members, or special features of each so designated bridge.

§650.305 Frequency of Inspections.

(a) Each bridge is to be inspected at regular intervals not to exceed 2 years in accordance with Section 2.3 of the AASHTO Manual.

(b) Certain types or groups of bridges will require inspection at less than 2-year intervals. The depth and frequency to which bridges are to be inspected will depend on such factors as age, traffic characteristics, state of maintenance, and known deficiencies. The evaluation of these factors will be the responsibility of the individual in charge of the inspection program.

(c) The maximum inspection interval may be increased for certain types or groups of bridges where past inspection reports and favorable experience and analysis justify the increased interval of inspection. If a state proposes to inspect some bridges at greater than the specified 2-year interval, the state shall submit a detailed proposal and supporting data to the Federal Highway Administrator for approval.

§650.307 Qualifications of Personnel.

(a) The individual in charge of the organizational unit that has been delegated the responsibilities for bridge inspection, reporting, and inventory shall possess the following minimum qualifications:

(1) Be a registered professional engineer; or

(2) Be qualified for registration as a professional engineer under the laws of the state; or

(3) Have a minimum of 10 years of experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the “Bridge

Inspector's Training Manual,"¹ which has been developed by a joint Federal-state task force, and subsequent additions to the manual.²

(b) An individual in charge of a bridge inspection team shall possess the following minimum qualifications:

(1) Have the qualifications specified in paragraph (a) of this section; or

(2) Have a minimum of 5 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the "Bridge Inspector's Training Manual," which has been developed by a joint Federal-state task force; or

(3) Current certification as a Level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's program for National Institute for Certification in Engineering Technologies (NICET)³ is an alternative acceptable means for establishing that a bridge inspection team leader is qualified.

§650.309 Inspection Report.

The findings and results of bridge inspection shall be recorded on standard forms. The data required to complete the forms and the functions which must be performed to compile the data are contained in Section 3 of the AASHTO Manual.

§650.311 Inventory.

(a) Each state shall prepare and maintain an inventory of all bridge structures subject to the Standards. Under these Standards, certain structure inventory and appraisal data must be collected and retained within the various departments of the state organization for collection by the Federal Highway Administration as needed. A tabulation of this data is contained in the structure inventory and appraisal sheet distributed by the Federal Highway Administration as part of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (Coding Guide) in January of 1979. Reporting procedures have been developed by the Federal Highway Administration.

(b) Newly completed structures, modification of existing structures which would alter previously recorded data on the inventory forms, or placement of load restriction signs on the approaches to or at the structure itself shall be entered in the state's inspection reports and the computer inventory file as promptly as practical but no later than 90 days after the change in the status of the structure for bridges directly under the state's jurisdiction and no later than 180 days after the change in status of the structure for all other bridges on public roads within the state.

Effective date October 25, 1988.

¹ The "Bridge Inspector's Training Manual" may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

² The following publications are supplements to the "Bridge Inspector's Training Manual": "Bridge Inspector's Manual for Movable Bridges," 1977, GPO Stock No. 050-002-00103-5; "Culvert Inspection Manual," July 1986, GPO Stock No. 050-001-0030-7; and "Inspection of Fracture Critical Bridge Members," 1986, GPO Stock No. 050-001-00302-3.

³ For information on NICET program certification, contact: National Institute for Certification in Engineering Technologies, 1420 King Street, Alexandria, VA 22314. Phone (703) 684-2835.