

also based on load rating calculations. Therefore, the FHWA would like to ensure that qualified engineers determine these load ratings. The AASHTO "Manual for the Condition Evaluation of Bridges," states that the individual charged with overall responsibility for determining load ratings of bridges should be a PE. Although we did not receive any comments regarding the need to establish qualifications for this individual, the FHWA believes it is important to outline the qualifications. Therefore, consistent with the AASHTO Manual, the FHWA proposes to require that the individual responsible for determining load ratings of bridges shall be a registered PE in § 650.309(c). The FHWA also proposes to define the term "load rating" in § 650.305.

The Bureau of Indian Affairs, the Michigan and Pennsylvania DOT's, and the Advocates recommended that a requirement for periodic bridge inspection refresher training be established and incorporated in the regulation. The recommended frequency of this training varied from one to eight years.

The FHWA concurs with the comments regarding the need for periodic refresher training. A requirement for refresher training every five years for all program managers and team leaders is proposed in § 650.309(d). The refresher training will assist in maintaining the skills and knowledge level needed to perform accurate and thorough bridge inspections in a consistent manner as technology, materials, bridge designs, and available tools change. The National Highway Institute (NHI) currently offers a FHWA approved bridge inspection refresher training course.⁴ Other refresher training could be developed by a State or Federal organization, subject to the FHWA approval.

The Michigan DOT stated that specific requirements relative to an inspector's physical characteristics, such as vision and mobility, should not be addressed in the regulation.

The FHWA agrees with the comment that vision, mobility, and other physical characteristic requirements do not need to be addressed within the regulations. As stated above, State and Federal organizations are responsible for evaluating the qualifications of those involved in the bridge inspection program. The need for good vision and physical mobility are important in the performance of many bridge inspection

activities, particularly since the most frequent method of nondestructive evaluation is visual and access to elements of most bridges requires climbing and other physical performance. States and Federal organizations are strongly encouraged to consider these characteristics when evaluating qualifications of bridge inspection personnel.

The Massachusetts, Connecticut, and South Dakota DOT's, the Advocates, and Collins Engineers, Inc., stated that minimum training requirements should be established for all bridge inspection team members.

Based on comments from the Massachusetts, Connecticut, and South Dakota DOT's, the Advocates, and Collins Engineers, Inc., the FHWA considered the establishment of minimum qualifications for bridge inspection team members who are not team leaders. Given that a qualified team leader must be on site during the inspection and that many organizations use seasonal helpers, we decided that this is a personnel issue that should be addressed at the State or Federal agency organization level.

The majority of commenters were not in favor of establishing a requirement that those performing underwater bridge inspections be licensed professional engineers (PE). Those who were opposed to this requirement felt that the supply of licensed PE divers would not be sufficient to meet the demand, resulting in significantly higher costs of underwater inspections without a corresponding benefit. Proponents for requiring that underwater bridge inspectors be licensed PEs reasoned that there is a sufficient cadre of licensed PE divers and that costs for such would be competitive with non PE divers and would provide for a much better product. Also, many commenters indicated support for requiring that a PE be present during the underwater inspection. Commenters also stated that the regulation should establish the same qualifications for both above and below water inspectors, noting that diving is merely a means of transportation.

The FHWA concurs with the commenters who were not in favor of requiring that those performing underwater bridge inspections be licensed PEs. Currently, the NBIS does not have a requirement for the qualifications of underwater bridge inspectors. Because the desired qualifications of such personnel vary with the complexity of the bridge, the FHWA proposes § 650.309(e) to require at a minimum that all underwater inspection divers who are not fully qualified as program managers or team

leaders must complete a comprehensive bridge inspection training course. This requirement would help to ensure that a properly trained inspector, who does not necessarily have to meet team leader qualifications, performs the inspection in those instances when direct observation by a team leader is not possible. At a minimum, a qualified team leader must be on-site during the underwater inspection. The importance of having a qualified team leader on site during the underwater inspection cannot be overemphasized, and is proposed as a requirement under § 650.313(b).

The Association of Diving Contractors International, Inc. noted that in order to be compliant with the Occupational Safety and Health Administration's (OSHA) regulations contained in 29 CFR part 1910, subpart 7, dive team members must meet qualifications that require appropriate commercial diver training.

The FHWA position on this issue would be that in addition to having appropriate bridge inspection training, those personnel who participate as bridge inspection dive team members must meet minimum diver qualifications that entail training as a professional diver. Those qualifications should meet or exceed OSHA and/or industry safety standards and should be established by the "Bridge inspection organization" and need not be mandated in the NBIS. By giving the "Bridge inspection organization" the latitude to establish diver qualifications including training for its organization, the "Bridge inspection organization" may choose to establish diver qualification and training that exceed OSHA and/or industry standards. States and Federal organizations are strongly encouraged to consider stringent bridge inspection dive team member qualifications for the conduct of safe diving operations in support of bridge underwater inspections.

Proposed Section 650.311 Inspection Frequency

In this section, the FHWA examines inspection frequency and how an NBI of roughly 590,000 bridges should be inspected to assure the safety of the motoring public.

The majority of the commenters thought that the maximum inspection interval of 4 years for certain structures is reasonable and should not be extended; the remaining commenters said that 6 to 10 years may be appropriate for some low-risk structures. The majority of commenters stated that the maximum inspection cycle for most structures should remain at 2 years.

⁴ Information regarding NHI training can be obtained at the following URL: <http://www.nhi.fhwa.dot.gov>.