(Module 16 Course Conclusion)

MODULE 16 - COURSE CONCLUSION
LESSON 16.2B - REVIEW FOR FINAL ASSESSMENT (PART 2) NBI CONDITION/APPRAISAL RATING AND ELEMENT LEVEL EVALUATION EXAMS

Safety Inspection of In-Service Bridges

Lesson 16.2B Review for Final Assessment (Part 2) NBI Condition/Appraisal Rating and Element Level Evaluation Exams
Lesson 16.1 Course Wrap-Up

Lesson 16.2 Review for Final Assessment

Lesson 16.3 Final Assessment
| 3 |

**LEARNING OUTCOMES**

A. Demonstrate competencies required to be a certified bridge inspector
Module 16 Course Conclusion

Lesson 16.2B Review for Final Assessment (Part 2) NBI Condition/Appraisal Rating and Element Level Evaluation Exams

DEMONSTRATE COMPETENCIES REQUIRED TO BE A CERTIFIED BRIDGE INSPECTOR

- NBI Condition and Appraisal Rating
- Element Level Evaluation
GROUP EXERCISE

Page 16.2b.5

- Determine the correct NBI rating or element level evaluation
- Use PW page 4.3.7 for condition rating guidelines (page 38 of the Coding Guide)

Using the questions on the following pages as an ARS review for the course.
ROUND 1

• NBI Component and Appraisal Rating

• Round 1 has 2 questions that focus on NBI component and appraisal ratings
• Exact answers are worth 200 points
• ±1 answers are worth 100 points
QUESTION 1: PHOTOS 1-4

- **Item 59 - Superstructure**
  - Photo 1: General elevation view of simple 2-span concrete tee-beam bridge
    - No deficiencies noted in Span 1
  - Photo 2: General underside view of tee-beams in Span 2
    - No deficiencies noted on bottoms of beams
  - Photo 3: Tee-beam No. 6 in Span 2
    - Six partially exposed stirrups near midspan (resulting from insufficient concrete cover)
    - Nearly 100% original section left (no measurable section loss)
  - Photo 4: Underside of deck/tee-beam top flange in Span 2
    - Honeycombing present (area of two square feet)
    - Deck for this structure is rated a "7"
<table>
<thead>
<tr>
<th></th>
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<th>The superstructure is in good condition structurally. The exposed stirrups and honeycombing are in isolated locations and are considered minor problems.</th>
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Using ARS, select the best answer to the question on the slide.
QUESTION 2: PHOTOS 1-4

- **Item 59 - Superstructure**
  - Photo 1: Typical underside view
    - Spotty failure of the paint system over the entire structure
  - Photo 2: Typical underside view
    - Large accumulations of pigeon droppings over the entire structure (causing breakdown of the paint system)
  - Photo 3: Typical underside view
    - No structural problems were observed with the diaphragms or lateral bracing systems
    - No deficiencies were observed on the two steel box cross-girders
    - No collision damage was noted
  - Photo 4: Typical welded connection of multi-girder to cross-girder
    - No deficiencies
QUESTION 2: PHOTOS 5-8

- Photo 5: Typical girder field splice
  - No problems
- Photo 6: Typical girder bottom flange transition weld
  - No crack indications were found
- Photo 7: Typical girder web stiffeners
  - No problems were found
- Photo 8: Two fascia girders at first deck joint
  - Medium surface rust in the web over the lower eight inches
**QUESTION 2: WHAT IS THE CORRECT SUPERSTRUCTURE COMPONENT RATING?**

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<td><strong>1</strong></td>
<td>Good structural condition. The primary structural members (girders) show some minor localized deterioration. The paint distress is a problem but is not deterioration since there is only surface rust, with no measurable section loss. The cross-girders are FCM's, but have no deficiencies.</td>
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</table>
• Round 2 questions pertain to element level evaluation
• Identify the correct element and condition state
### QUESTION 3: WHAT IS THE CORRECT CONDITION STATE?

<table>
<thead>
<tr>
<th>Condition State</th>
<th>Defects</th>
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<tbody>
<tr>
<td>A. Condition State 1</td>
<td>1080 and 1090</td>
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<tr>
<td>B. Condition State 2</td>
<td></td>
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<tr>
<td>C. Condition State 3</td>
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<td>D. Condition State 4</td>
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Element #110 R/C Beam

Select the best answer to the question on the slide.

- Element #110, Reinforced concrete beam
- Tee-beam No. 6 in Span 2
  - Six partially exposed stirrups near midspan (resulting from insufficient concrete cover) (Approx. 1 inch or less)
  - Nearly 100% original section left (no measurable section loss)
QUESTION 4: WHAT IS THE CORRECT CONDITION STATE?

Element #311
Moveable Bearing

A. Condition State 1
B. Condition State 2
C. Condition State 3
D. Condition State 4

Defects 1000 and 2210

Select the best answer to the question on the slide.

- Element #311, Moveable Bearing (roller nest)
- Roller nest bearing supporting a steel truss
  - Surface corrosion and paint failure, no measurable section loss
  - No reduction of load capacity
  - Movement may be slightly compromised
LEARNING OUTCOMES

A. Demonstrate competencies required to be a certified bridge inspector