

2023 DAM SAFETY WORKSHOP



**NATURAL RESOURCES
DIVISION**

YOUR RESPONSIBILITIES AS A DAM OWNER

Title VII

Arkansas Natural Resources Commission*

Rules Governing Design and Operation of Dams

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Subtitle VIII. Operation and maintenance

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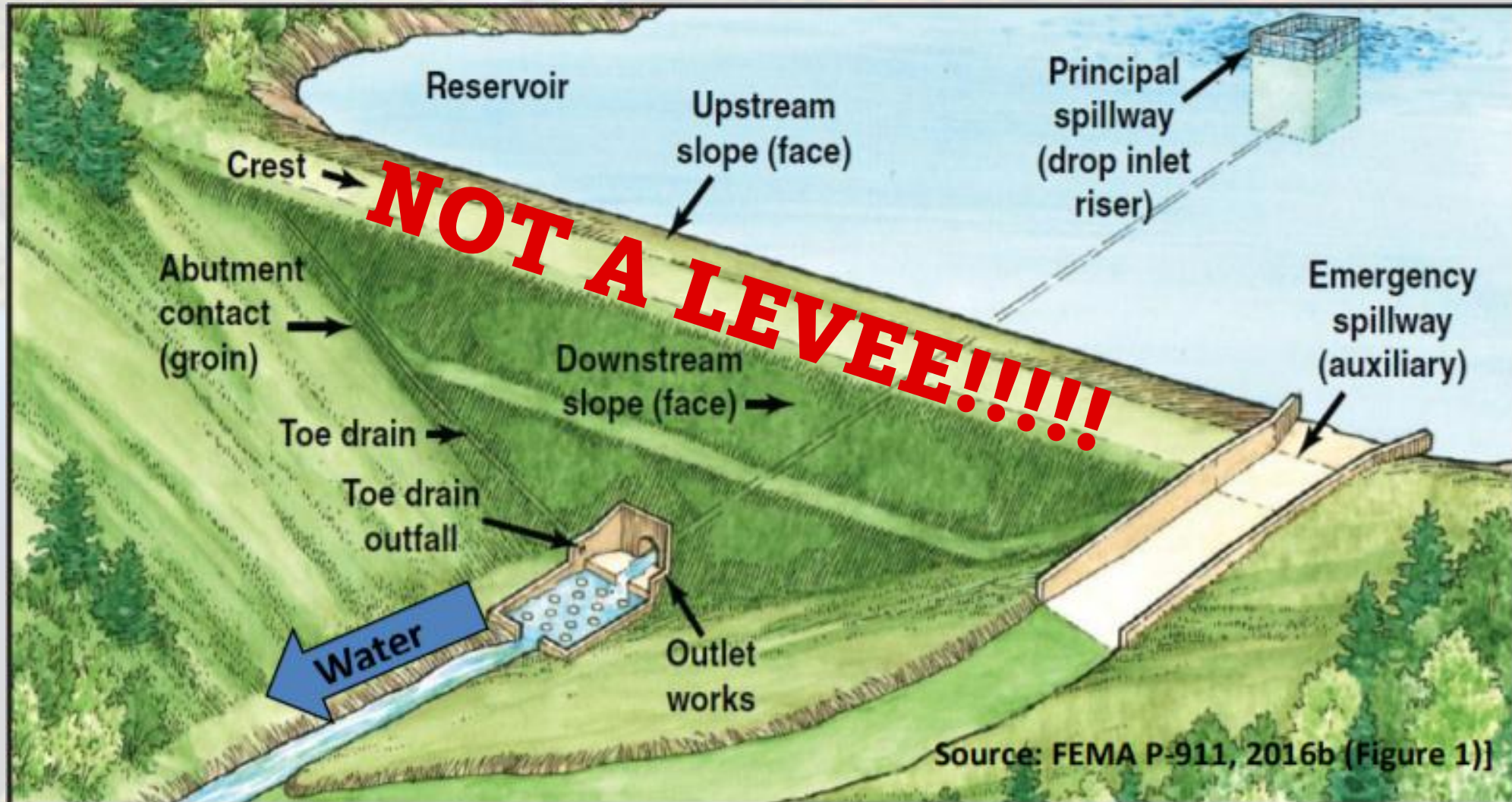
Section 708.5 Operation of gates and controls.

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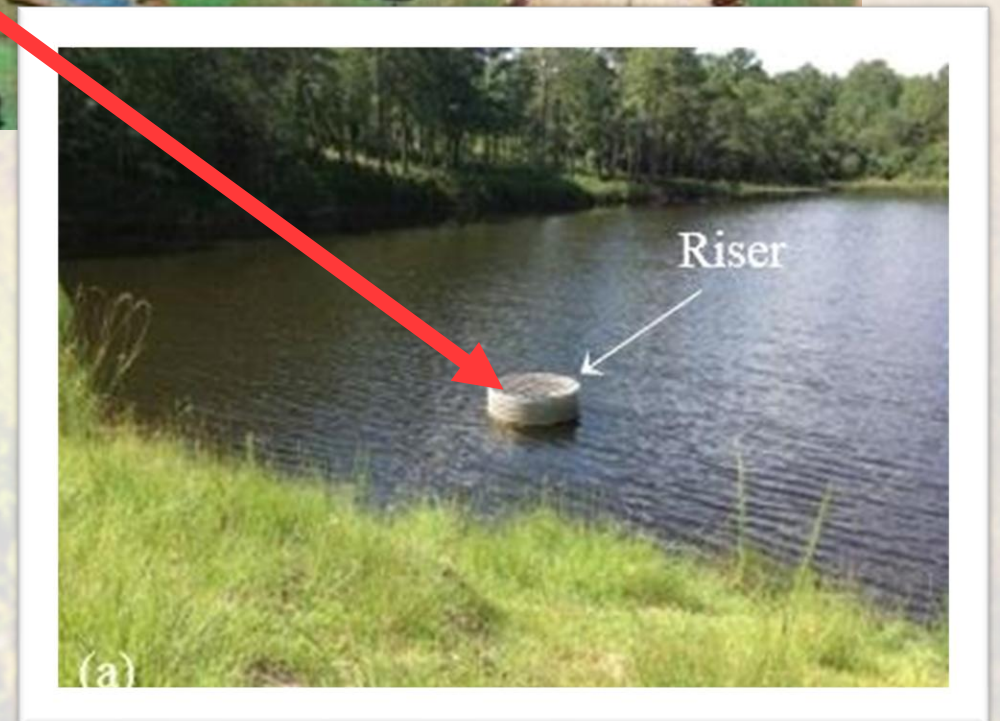
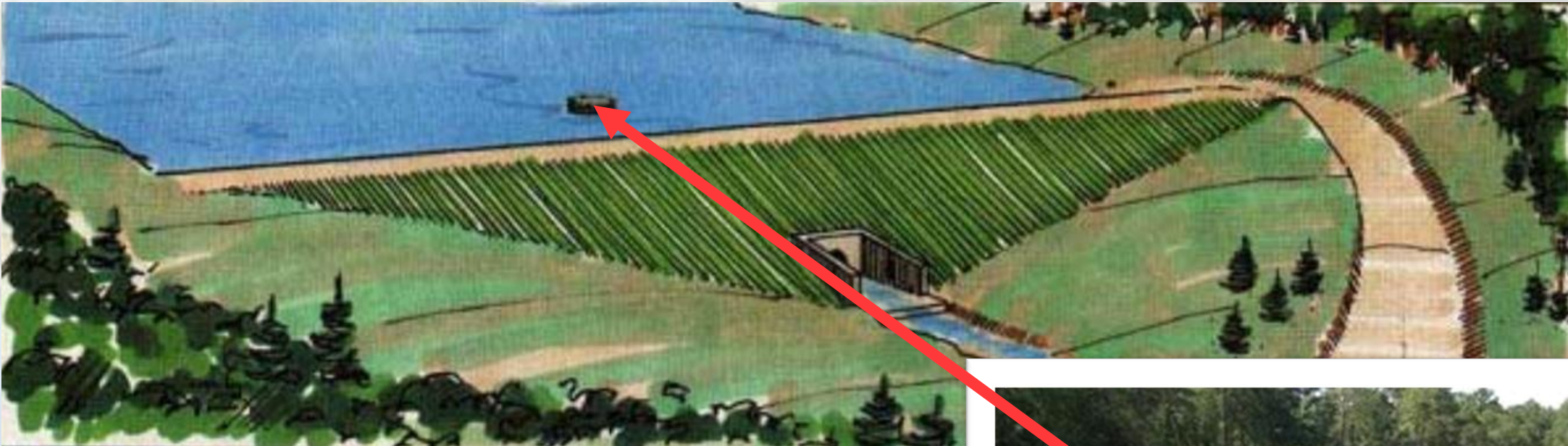


OPERATION AND MAINTENANCE





OPERATION AND MAINTENANCE



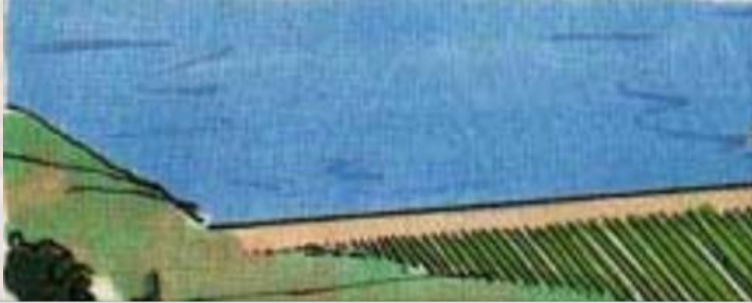
OPERATION AND MAINTENANCE



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OPERATION AND MAINTENANCE

Section 708.3 Woody vegetation prohibited: embankment dams

- ☐ Protect embankments, abutments, crests, and earthen channels from erosion
- ☐ Growth of woody vegetation is not permitted on the spillway, crest, upstream or downstream embankments, and within 20 feet of the downstream toe or groin of the dam
- ☐ REMOVE trees with roots likely to extend to the crest of the dam
- ☐ Trees larger than 6 inches in diameter must be removed with roots larger than two inches
- ☐ Resulting voids shall be repaired with compacted soil similar to the remaining embankment material



OPERATION AND MAINTENANCE

Section 708.3 Woody vegetation prohibited: embankment dams

- ☐ Smaller trees and brush, and those not on embankments may be cut and/or treated with herbicide
- ☐ Time for compliance: new growth must be removed before it shades out desirable vegetation generally on a two-year cycle





Dam Owner's Guide To Plant Impact On Earthen Dams

FEMA L-263 / September 2005



Technical Manual for Dam Owners

Impacts of Plants on Earthen Dams

FEMA 534 / September 2005



OPERATION AND MAINTENANCE

Section 708.5 Operation of gates and controls

- ❑ All gates, valves and controls, must be maintained in operational condition. Operation of each such item must be tested at least annually, and such tests must be documented in the owner's permanent records.



OPERATION AND MAINTENANCE

Section 708.5

Operation of gates and controls

-
- ☐ Written approval by the Chief Engineer is required before repairs or modifications to a dam or appurtenances may be undertaken. Plans and specifications prepared by a registered professional engineer may be required for major actions.





- ☐ Visual inspection of the dam
- ☐ Inspection results must be summarized on forms supplied by ANRC
- ☐ Mail results to ANRC/Dam Safety within 10 days of inspection
- ☐ Dam Safety staff may provide training or assistance in performing or interpreting inspections
- ☐ At least once per year
- ☐ After each major storm event

INSPECTIONS


Section 709.1 Owner inspection



INSPECTIONS

Section 709.1 Owner inspection

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ARKANSAS NATURAL RESOURCES COMMISSION
DAM INSPECTION FORM FOR EARTHEN EMBANKMENT DAMS

INSPECTION TYPE

☐ ANNUAL

☐ MAJOR STORM EVENT

Name of Dam: _____

ARNUM: _____

In accordance with Subtitle IX, Section 709.1 of the Rules Governing Design and Operation of Dams Title 7:
At least once per year and after each major storm event, the owner (or owner's agent) of all permitted dams must perform a visual inspection of the dam. Results of such inspections must be summarized on forms supplied by the Commission and mailed to the Commission office within 10 days of inspection. Commission staff may provide training or assistance in performing or interpreting inspections. Any deterioration of the dam or appurtenances must be reported to the Commission, and remedial measures undertaken after approval by the Chief Engineer.

Date: _____

Weather: _____

Inspected by (Print Name): _____

If an inspection item requires further action on your part, place a check mark to the left of the number of the item.

A. CREST (REFER TO GLOSSARY FOR DESCRIPTION)

☐ 1. How would you describe the vegetation on the crest? (Check all that apply)
Recently Mowed _____ Overgrown _____ Good Cover _____ Sparse _____
Other/Corrective Action (describe): _____

☐ 2. Are there any trees or other inappropriate or excessive vegetation on the crest? Yes _____ No _____
If yes, describe (type of vegetation, size, location, etc.)/Corrective Action: _____

☐ 3. Is there a paved road or driveway on the crest? Yes _____ No _____
If yes, describe the condition (for example, good condition, numerous cracks, newly paved)/Corrective Action: _____

☐ 4. Are there any depressions, ruts or holes on the crest? Yes _____ No _____
If yes, describe (size, location, etc)/Corrective Action: _____

☐ 5. Are there any cracks on the crest? Yes _____ No _____
If yes, describe (length and width, location, direction of cracking, etc.)/Corrective Action: _____

☐ 6. Other observations on the crest/Corrective Action: _____

2023 Dam Safety Workshop

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EAPS

Section 710.1 Emergency action plans required

- ☐ An emergency action plan (EAP) must be prepared by the owner for all permitted high hazard dams.
- ☐ Written approval of the Chief Engineer must be obtained for all EAPs.
- ☐ Site conditions will dictate exact contents of specific EAPs



EAPS

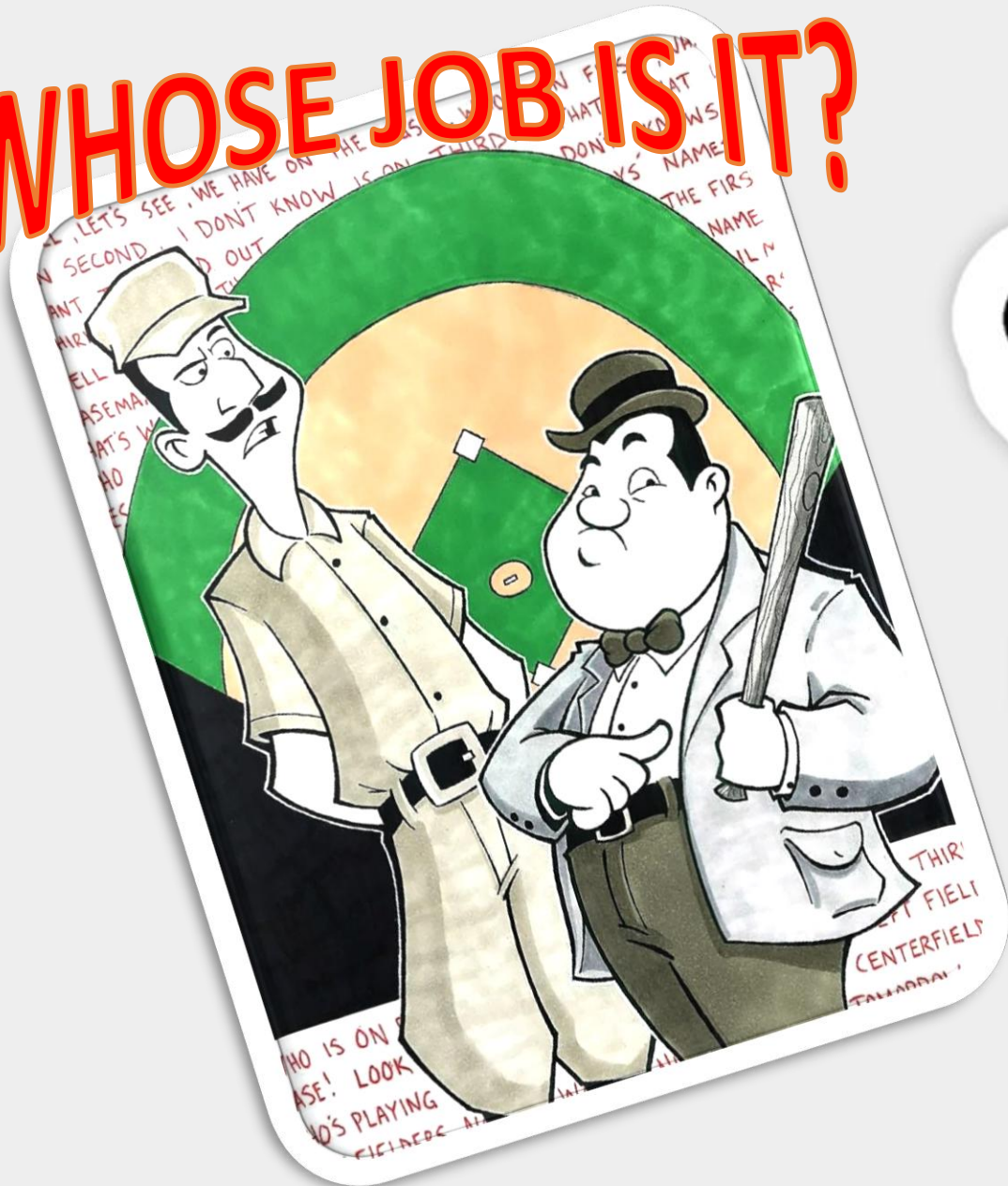
Section 710.4 Annual exercises and drills

- ☐ Implementation of EAPs must include at least one tabletop exercise per year and one test drill every three years.
- ☐ The Commission's Chief Engineer must be notified at least one week in advance of either procedure.





WHOSE JOB IS IT?



WHO?

- ☐ Who owns the dam?
- ☐ Who is liable for the dam?
- ☐ Who is responsible for O&M?

WHAT?

- ☐ What actions must be taken to maintain the dam?
- ☐ What must be done to repair the dam?

WHEN?

- ☐ What is the maintenance schedule?
- ☐ What is the inspection schedule?
- ☐ When is the EAP due?

HOW (MUCH)?

- ☐ Cost of ongoing maintenance and repair?
- ☐ Set aside for catastrophic events?
- ☐ Staffing salary?



A cartoon character with a white face and a single black dot for an eye is holding a blue rectangular sign with rounded corners. The sign has a thick dark blue border and two white oval shapes on its sides, resembling eyes or handles. The background is a blurred image of a lake and trees.

CLEAR RESPONSIBILITY, DUTIES, FINANCING



**QUESTIONS?
COMMENTS?**