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DATE: October 23, 2024

MEMORANDUM

To: All Regional Engineers and Staff

From: Dam Safety Raleigh Central Office

Subject: Guidance for Maintenance and Construction Activities

On October 10, 2023 a memorandum was issued providing common examples of activities that constitute Maintenance, Repair, or Modification activities on dams. The purpose of this memorandum is to revise this guidance to reflect recent changes in the North Carolina Dam Safety Program's (Dam Safety) application fee structure, which simplifies Repair and Modification activities into "Construction" activities. The new revised guidance is provided below:

In order to assist dam owners to comply with NCGS 143-214.27 and 15A NCAC 02K, Dam Safety has created the following guidelines providing examples of common work activities falling within the categories of "Maintenance" and "Construction", and whether they require or do not require submittals and fees to Dam Safety for review and approval. Please note this list is not exhaustive and is subject to change. Should any proposed activities, whether listed below or not, present a probable likelihood of adversely impacting the safe operating condition of the dam, or if you are unsure of the scope of any activities, please contact Dam Safety at 919-707-9214.

The following constitute "Maintenance" activities, and thus do not require Dam Safety authorization – fees are not currently required for authorization:

1. Mowing.
2. Reseeding and revegetation of grass cover on bare areas.
3. Cutting and controlling of trees, brush, and woody vegetation less than six inches in diameter at breast height.
4. Removal of debris, driftwood, and above-ground portions of fallen, overturned, dead or unhealthy trees on dams from storm events.
5. Application of herbicides to riprap armoring to control vegetative growth.
6. Bathymetric or land surveying.
7. Inspections of roadways on top of dams.



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8. Replacement or repair in-kind of above-ground portions of piezometers, inclinometers, and observation wells.
9. Cleaning or in-kind replacement of trash racks.
10. Welding of rebar trash racks or sheet metal skimmers.
11. Installation of flow measuring weirs in stream courses greater than 15 feet away from the downstream toe of dams.
12. Exploratory test borings and geotechnical borings up to six inches in diameter into earthen embankments and concrete dam components performed under the supervision of a Professional Engineer licensed in the State of North Carolina. A courtesy notification should be provided to our office when such activities are to occur. All borings must be grouted after completion.
13. Lubrication and exercising of gates, valves, valve stems and/or operators.
14. Replacement or repair in-kind of gates, valves, valve stems and/or operators that cause no changes to dimensions or flow capacity.
15. Electrical or mechanical repair or relocation of valve and gate actuators by qualified personnel.
16. Replacement in-kind of actuators and actuator control or support structures by qualified personnel.
17. Painting of exterior and interior surfaces of dam componentry.
18. Installation, repair or removal of signage on or around a dam.
19. Cleaning of pipes and pipe outfalls.
20. Visual or video inspections of pipe outfalls.
21. Replacement in-kind of existing riprap located on the dam.
22. Replacement in-kind of existing paving and aggregate cover without significant elevation change (less than 0.1 foot) to crest elevation for existing access roadways on dams.
23. Replacement or repair in-kind of spillway access or safety structures, provided there is no excavation into dam embankments.
24. Replacement or repair in-kind of existing flashboards and existing items associated with flashboards.
25. Addition or removal of flashboards for the purposes of temporarily adjusting impoundment levels (ahead of storm events, for lake edge/dock maintenance, etc.).
26. Repair of existing minor (non-integral to operation of dam) surficial stormwater control structures associated with existing access roadways on dams, provided there is no excavation into dam embankments.
27. Repair of erosion rills or gullies, the lesser of either twelve inches in depth or one lift of fill, not requiring backfill compaction.
28. Repair of surficial wave erosion on the upstream toe of dams not requiring backfill compaction or additional armoring.
29. Excavation of CCR material from coal ash impoundments or tailings from mining impoundments not requiring alteration of the dam.



30. Dredging sediment from the reservoir/lake with no alteration/impact on the dam and appurtenant structures.
31. Installation, repair or removal of electrical systems not requiring excavation into the dam by qualified personnel.
32. Replacement or repair in-kind of fish ladders and/or fish ladder componentry.
33. Replacement or repair in-kind of floating structures tethered with minimal localized measures (guy wires/anchors, helical piers, cabling, etc.), except within the confines of a spillway.

The following constitute “Construction” activities, and thus do require Dam Safety authorization - fees are required for authorization:

1. Construction of a new dam structure and/or appurtenant works.
2. Instances of work resulting in a change to spillway dimensions or flow capacity.
3. Instances of work resulting in a change to crest elevation.
4. Instances of work resulting in a change to upstream/downstream slope grades.
5. Instances of work resulting in a change to a dam section (installation of anchors, sheet piles, etc.).
6. Excavation and backfilling required for complete root-ball removal of trees, brush, and woody vegetation greater than six inches in diameter at breast height.
7. Removal of exposed root networks or uprooted portions of fallen, overturned, dead or unhealthy trees on dams from storm events.
8. Repair of erosion rills or gullies, the lesser of either twelve inches in depth or one lift of fill, requiring backfill compaction.
9. Repair of wave erosion on the upstream toe of dams requiring backfill compaction or additional armoring.
10. Instances of work requiring backfill compaction.
11. Repair of any slide events or any damage resulting from slope instability.
12. Repair of any sinkhole events.
13. Repair or replacement in-kind of existing security systems.
14. Installation, repair, or removal of piezometers, inclinometers, and observation wells.
15. Installation, repair, or removal of toe drains.
16. Installation, repair, or removal of a spillway and/or spillway componentry.
17. Installation, repair, or removal of bottom drains.
18. Installation, repair, or removal of permanent siphon systems.
19. Installation, repair, or removal of sluice gates.
20. Installation, repair, or removal of sliplining of pipes through dams.
21. Installation, repair, or removal of fish ladders.
22. Installation, repair, or removal of gates, valves, valve stems and/or operators that cause changes to dimensions or flow capacity.



23. Installation, repair, or removal of any security fencing into a dam, spillway, or associated appurtenances. Fencing may not be placed across spillways, and, generally, fencing is strongly discouraged.
24. Installation, repair, or removal of electrical systems (poles, overhead electric lines, underground electric lines, etc.) requiring excavation into the dam.
25. Installation or removal of security systems.
26. Repair of existing permanent structures located in spillways.
27. Installation of new actuators and actuator control or support structures by qualified personnel.
28. Installation, repair, or removal of utility structures (gas lines, water lines, sewer lines, fiber optic lines, etc.).
29. Installation of flow measuring weirs in stream courses less than 15 feet away from the downstream toe of dams.
30. Exploratory test borings and geotechnical borings greater than six inches in diameter into earthen embankments and concrete dam components performed under the supervision of a Professional Engineer licensed in the State of North Carolina. All borings must be grouted after completion.
31. Installation or removal of paving and aggregate cover to roadways on dams.
32. Installation or removal of riprap located on the dam.
33. Installation, repair or removal of spillway access or safety structures which may or may not require excavation into dam embankments.
34. Repairs to flashboards and items associated with flashboards not covered under #24 in the Maintenance activities section.
35. Replacement in-kind of RCP joints.
36. Replacement or repair in-kind of sealant on joints or cracks on concrete dam components.
37. Repair to spalling or major cracks on concrete dam components.
38. Repair of voids within or beneath spillways.
39. Installation, repair, or removal of foundation structures (piers, piles, footings, etc.).
40. Installation or removal of existing minor (non-integral to operation of dam) surficial stormwater control structures associated with existing access roadways on dams.
41. Repair of existing minor (non-integral to operation of dam) surficial stormwater control structures associated with existing access roadways on dams requiring excavation into dam embankments.
42. Instances of work done in response to a Dam Safety Program (or associated agencies) issued Notice of Deficiency, Dam Safety Order, or other enforcement action.
43. Installation or removal of permanent structures located in spillways.
44. Installation or removal of trash racks with the exception of pre-fabricated/pre-engineered trash racks (specified by a municipality, vendor specific, etc.).
45. Repairs to existing trash racks not covered under #9 and #10 in the Maintenance activities section.



46. Installation of new seepage control filters, cutoff structures, or other seepage control measures.
47. Installation or removal of flashboards and items associated with flashboards.



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