



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

NOTICE OF DEFICIENCY

March 28, 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. John Toepfer, PE
Duke Energy
410 S. Wilmington St./NC14
Raleigh, North Carolina 27601

RE: Cape Fear 1985 Ash Pond Dam
State ID: CHATH-079
Chatham County
Watershed: Cape Fear

Dear Mr. Toepfer:

As you know, the Dam Safety Law of 1967 (Law) provides for the certification and inspection of dams in the interest of public health, safety, and welfare, in order to reduce the risk of failure of dams, to prevent injuries to persons, damage to downstream property, and to ensure the maintenance of stream flows.

An inspection of the referenced dam was conducted on February 21, 2014 by staff of the Land Quality Section, Raleigh Regional Office. At that time, the structure appeared to be stable overall; however, we did discuss your ongoing investigation of apparent joint leakage observed by Duke Energy personnel at the riser serving this dam, and potential repairs that might be subject to the permitting requirements of the Law. We also reviewed routine maintenance associated with the embankments. After our department received notice from Duke Energy on March 20, 2014, regarding the formation of a crack at the upstream crest edge in the vicinity of the riser, we immediately visited the site again to evaluate the changing conditions and facilitate emergency response. During this inspection, the following conditions were noted:

A significant longitudinal crack (approximately 40 feet in length with a maximum width of about 4 inches) had formed along the upstream crest edge of the embankment in the vicinity of the riser where fill had been added over time to widen the embankment crest and improve access to the spillway. A maximum subsidence of about 18 inches was observed near the center of the crack as well as an apparent bulge in the embankment

material below the visible crack, near the existing riprap ground cover, very close to the riser structure. It was reported that the crack was first observed by Duke Energy personnel about 2 weeks before that date, when it was very small and appeared to be associated with a small, shallow slough that would not be a serious threat to the stability of the dam. Investigative work continued around the spillway, and seals were installed in the riser joints (observed during our March 20 inspection) in an attempt to prevent further leakage into the riser or spillway pipe. Duke Energy's engineering support and geotechnical consultant were mobilized to evaluate the enlarged crack on March 20, 2014, resulting in notification of our department and development of an emergency response to address the problem.

As we discussed at the site, our primary and immediate concern was that an upstream slope failure in the affected area could result in displacement of the riser, opening a joint where impounded wastewater could be rapidly lost and the embankment could be seriously damaged. The observed conditions indicated that such a slope failure may be developing, and it was agreed that emergency repairs were necessary under the provisions of NCGS 143-215-.27(b). We approved use of an inflatable plug in the spillway outlet conduit and removal of the slough from the upstream slope to secure the site until a more comprehensive engineering solution addressing the emergency repairs as well as more permanent spillway conduit repairs could be developed to ensure the stability of the dam. Based on a follow-up inspection I conducted on March 21, 2014, your emergency repair work was completed in a timely manner, and appears to be sufficient to prevent the failure scenario we were most concerned about at that time. The remaining issue centers on the more comprehensive engineering solution described above.

In order to ensure the safety of this dam, you must complete the comprehensive engineering reports and plans outlined in the emergency repair approval issued to Mr. Scott Harris, PE (engineer of record) by our State Dam Safety Engineer, Steven M. McEvoy, PE, on March 21, 2014. These reports and plans must be provided by April 7, 2014.

In addition to the above, the following regular maintenance actions, not requiring design or approval, should be completed by April 30, 2014. These items include the following:

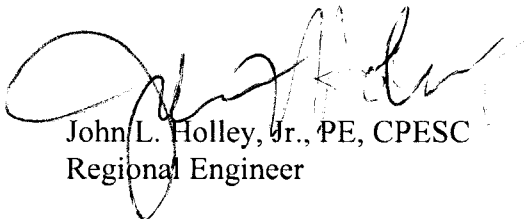
The three small depressions we observed on February 21, 2014 near the top of the eastern downstream face of the embankment should be backfilled with suitable granular material and stabilized as a part of your ongoing ground cover management process at the site. All woody vegetation should continue to be removed from the embankments. All seepage areas previously identified at this site should continue to be monitored regularly to check for any changed conditions.

As discussed with Duke Energy in the past, you may incur liability as an owner should your dam have a problem or fail, if such an event results in loss of life, property damage, or environmental damage downstream. It is therefore requested that you prepare an Emergency Action Plan (EAP) for this dam. The EAP establishes procedures to be followed in events that could adversely impact the dam such as extreme precipitation, seismic activity, excessive seepage, slides, sinkholes, and other natural hazards, and for warning the public downstream in the event of an emergency at the dam. Guidance for preparing an EAP can be found on the Internet through our website or by calling Dam Safety Program staff at (919) 707-9220. Two copies of an EAP for this dam should be submitted to the following address:

NC Division of Energy, Mineral and Land Resources
Land Quality Section
Attn: Mr. Steven M. McEvoy, PE
1612 Mail Service Center
Raleigh, NC 27699-1612

Thank you for your timely response in this matter to date. Please contact us at (919) 791-4200 as soon as possible to advise us of your intended follow-up action in response to this Notice. If we do not receive notification, or the requested reports/plans related to the current repairs on or before April 7, 2014, we shall present the case information for appropriate enforcement action, as needed to achieve full compliance.

Sincerely,



John L. Holley, Jr., PE, CPESC
Regional Engineer

cc: DWR Regional Supervisor
State Dam Safety Engineer