

Comments on Duke Belews Creek

EPA HQ -

1) Pages 2-3 - The North Carolina Department of Environment and Natural Resources will assume regulatory oversight on January 1, 2010 - not August 1, 2009.

EPA Region -

From: Karrie-Jo Shell
Sent: 11/07/2009 01:54 PM EST
To: Dee Stewart
Cc: nuhfer.mark@epa.gov
Subject: Re: Fw: Comment Request on EPA's Draft Coal Ash Impoundment Assessment Reports

I looked at both reports, but I did not go on the site visit to the Roxboro plant--just to the Belews Creek plant. I have no comments on either report.
Karrie-Jo Robinson-Shell, P.E.

State Comments:

From: "Boone, Ron" <ron.boone@ncdenr.gov>
To: James Kohler/DC/USEPA/US@EPA
Cc: "Tedder, Steve" <steve.tedder@ncdenr.gov>, "Romanski, Autumn" <Autumn.Romanski@ncdenr.gov>, "Martin, Melonie Y" <Melonie.Martin@duke-energy.com>
Date: 11/20/2009 09:51 AM
Subject: Belews Creek Draft CCSI Report

Mr. Kohler,

On behalf of the NC Division of Water Quality's Winston-Salem Regional Office, I respectfully submit the following review comments on the Belews Creek Draft CCSI Report as prepared by CHA.

1. Section 1.2.1 of the report states, *"North Carolina State Permit No. NC0024406 has been issued to Duke Energy authorizing discharge under the National Pollutant Discharge Elimination System (NPDES) to the Little Belews Creek in accordance with effluent limitations, monitoring requirements and other conditions set forth in the permit. The permit became effective on April 9, 2009 and will expire on February 28, 2012."*

Although the above statement is true, because the report is targeted at the coal combustion surface impoundment at the Belews Creek steam station, we feel the statement should be rewritten to reflect the following: Duke Energy has been issued NPDES discharge permit NC0024406 from NC DWQ, which authorizes them to discharge wastewaters at two separate outfalls designated as 001 and 003. Outfall 001 discharges to West Belews Creek/Belews Lake and consists of once-through cooling water, intake screen backwash, recirculated cooling water and station equipment cooling water. Outfall 003 discharges to the Dan River and consists of the effluent from the ash basin, which itself is made up of several different waste streams, including treated wastewater consisting of waste streams from the power house and yard holding sumps,

ash sluice lines, chemical holding pond, coal yard sumps, stormwater, remediated groundwater, domestic wastewater, and flue gas desulphurization system blowdown.

No other comments were generated by our review. If you have any questions or concerns, please do not hesitate to contact me.

Best Regards,

Ron Boone
NC DENR Winston-Salem Regional Office
Division of Water Quality, Surface Water Protection
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Winston-Salem, NC 27107
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From: "Frost, Larry" <larry.frost@ncdenr.gov>
To: James Kohler/DC/USEPA/US@EPA, "Werner, Elizabeth" <elizabeth.werner@ncdenr.gov>
Date: 11/04/2009 09:32 AM
Subject: RE: Comment Request on EPA's Draft Coal Ash Impoundment Assessment Reports

James
I have no comment regarding these reports.
Thanks for the opportunity,
Larry

Larry Frost - Larry.Frost@ncdenr.gov
North Carolina Dept. of Environment and Natural Resources
Division of Waste Management - Solid Waste Section
Asheville Regional Office
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Also see attached document dated November 13, 2009

Company Comments: See attached document dated November 13, 2009



DUKE ENERGY CORPORATION

526 South Church Street
Charlotte, NC 28202

Mailing Address:
P.O. Box 1006
Charlotte, NC 28201

Via E-Mail and US Mail

November 13, 2009

Mr. Stephen Hoffman
US Environmental Protection Agency (5304P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: US EPA Request/ICR # 2350.01
Belews Creek Steam Station
3195 Pine Hall Road
Belews Creek, North Carolina 27009

Dear Mr. Hoffman,

Duke Energy Carolinas, LLC (DEC) received and has reviewed the draft report for Belews Creek Steam Station that resulted from the site assessment of the Coal Ash Retention Pond conducted by the US EPA and its engineering contractors on November 8-9, 2009. Duke Energy supports the EPA's objective to ensure ash basin dam safety. We have a comprehensive and robust monitoring, maintenance, and inspection program in place for all of our coal ash basin dams and remain committed to operating and maintaining these facilities safely.

The impoundment facilities at Belews Creek are currently under the regulatory authority of the North Carolina Utilities Commission. The Commission requires Duke Energy to have an inspection performed every five years by an independent consultant using qualified licensed Professional Engineers. The consultants utilized by Duke Energy to meet this requirement are equally qualified as those used by the EPA for its assessment. The last such inspection was performed in November, 2008, with the final report from our consultant received in February, 2009.

Effective January 1, 2010, the facilities will be under the regulatory authority of the North Carolina Department of the Environment and Natural Resources (NCDENR), Division of Land Resources, Office of Dam Safety. The Office of Dam Safety will conduct an assessment/inspection of the impoundments at a minimum of once every two years and in practice, plans to do the inspections once a year. Duke Energy also plans to continue our rigorous internal inspection program.

While the Belews Creek ash basin remains active, the majority of the coal ash at the Station is recycled or beneficially used. Bottom ash, sold in small quantities, goes to the lightweight concrete block industry. The greatest beneficial reuse is in the manufacture of concrete, where the low carbon content

of the Belews Creek fly ash makes it highly desired at ready-mix concrete plants. The addition of coal ash makes concrete less expensive and stronger, reducing energy requirements and carbon dioxide emissions released during the cement manufacture process and conserves landfill space. Experts estimate that every ton of ash used in cement saves enough energy to power an average American home for 24 days, and reduces carbon dioxide emissions equal to two months use of an automobile.

Duke Energy remains committed to meeting all state and federal requirements and to managing its coal combustion byproducts impoundments in a very safe and responsible manner. We are confident, based on our ongoing monitoring, maintenance and inspections, that each of our ash basin dams has the structural integrity necessary to protect the public and the environment. EPA's draft report for Belews Creek supports this conclusion and found that acceptable performance is expected in accordance with the applicable safety regulatory criteria. Our specific comments on the draft report are attached.

Duke Energy makes no confidentiality claims with respect to material contained in the draft report or with respect to this correspondence. If you have any questions, please contact me at our corporate offices at 980-373-3719 or via e-mail at ed.sullivan@duke-energy.com.

Sincerely,



D. Edwin M. Sullivan, P.E.
Consulting Engineer
Environment, Health, & Safety

Attachment

Review of USEPA Inspection Report by CHA – Belews Creek

1. On page 2, section 1.2, the report states, *“The Ash Basin dike was previously under the jurisdiction of the North Carolina Utilities Commission (NCUC)”* and later *“After August 1, 2009 regulatory oversight for the dam will be provided by the North Carolina Department of Environment and Natural Resources.”* Although legislation was passed this past summer, jurisdiction over the ash basin dikes remains with the NCUC until January 1, 2010. A similar incorrect statement regarding jurisdiction is on page 55, section 4.7.
2. On page 3, section 1.2, the report states, *“Under the criteria of the U.S. Army Corps of Engineers the ash basin dike is classified as a High Hazard structure.”* The U. S. Army Corps of Engineers has not rated any dam/dike structures at Belews Creek. The North Carolina Utilities Commission (NCUC) requested that Duke Energy consider the ash basin dike to be “high hazard” under the North Carolina Dam Safety Rules due to the potential environmental damage of an ash release in the event of failure.
3. On page 5, section 1.3.1, the report states, *“The pond does not directly receive coal combustion waste, only blowdown water and other washdown water from the maintenance of the boilers.”* As a part of periodic maintenance, boiler tubes are internally cleaned during a shutdown period to improve heat transfer and increase the energy conversion efficiency of the boiler. This cleaning occurs on the condensate and steam side of the tubes such that there is no contact with the combustion side of the tubes. The pond is used to collect the chemical cleaning water and the subsequent rinses from that process. It is not used to collect any blowdown water. Also, the report states that it was last used during the winter of 2008. This is incorrect, as it was last used in the spring of 2009.
4. On page 7, section 1.4, the report states, *“Additional slope stability calculations were reported to have been completed in 2003. CHA has requested the letter documenting this effort but it has not yet been received.”* This letter was delivered to CHA on October 19, 2009 by e-mail.
5. On page 22, section 2.5, the report states, *“Total seepage collected from 24 active horizontal drains generally measured at each drain outlet on a quarterly basis”.* This data is collected on a monthly basis.
6. On page 22, section 2.5, the report states, *“Eight settlement monitoring points exist on the embankment which were historically recorded from 1989 to 1993 most recent reading 2002”;* This is incorrect. Surveyors take annual readings of the settling monuments at Belews Creek. The 2009 readings have just been received.
7. On page 50, section 3.3.2, the report states, *“An independent stability analysis completed in 2003 was requested but not provided.”* See the response to item #3 above.
8. On page 54, section 4.6, the report states, *“CHA recommends a pipe and monitoring weir be installed in this area to facilitate quantifiable volume measurements and sample collection.”* CHA’s recommendation for piping and weir will do little to provide more “quantifiable” data regarding open slope seepage than is already being accomplished by way of monthly measurement of piped drains and flume measurement at the weir. Duke Energy will evaluate alternatives to achieve the stated goal.
9. On page 54, section 4.6, the report states, *“Seepage from several of the horizontal drains has been noted to be increasing at the toe, right abutment and central portions of the downstream*

toe. CHA recommends that the monitoring frequency be returned to the previous monthly schedule used in 2006/07 to ascertain if this is a long term or seasonal condition.” Seepage from the horizontal drains is already being measured and reported on a monthly basis based on data provided to CHA.

10. In the appendix, on EPA “Coal Combustion Dam Inspection Checklist Form” the Hazard Potential Classification is designated as “High”. The definition for “High Hazard Potential” given on page 2 of this form states, “Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.” In the next paragraph with the heading “DESCRIBE REASONING FOR HAZARD RATING CHOSEN”, the reasoning states, “...with possible loss of life...” Based on the stated reasoning by the Contractor, the correct hazard classification would be “Significant Hazard Potential”. The area in and around the ash dike structure is rural in nature and lightly populated. Route 1909 (Middleton Loop) is a lightly traveled county secondary road. Duke Energy agrees that loss of life may be possible given the right circumstances; however, loss of life is not probable under normal conditions. As such, the ash basin dike does not meet the definition of “High Hazard Potential”.
11. In the appendix, on EPA Coal Combustion Waste Impoundment Inspection Form, the last line incorrectly lists the state agency which regulates this impoundment as “NCUC (until 8-1-09) NCDENR (after 8-1-09)”. It should read, “NCUC (until 1-1-10) NCDENR (after 1-1-10)”.