

KENTUCKY COUNCIL FOR DIX DAM SAFETY



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Post Office Box 4795
Frankfort, Kentucky 40604-4795
E-Mail: dixdamsafety@fewpb.net

September 16, 2010

Attorney General Jack Conway
1023 Capital Center Drive
Suite 200
Frankfort, Kentucky 40601

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PUBLIC SERVICE
COMMISSION

Dear Attorney General Conway,

The Kentucky Council for Dix Dam Safety (KCDDS) requests your intervention in the ongoing acquisition of Kentucky Utilities/Louisville Gas & Electric (KU/LGE) by Pennsylvania Power and Light (PPL) from the international power consortium, E.ON. Our group is very concerned about the integrity and safety of the 85 year old Dix Dam owned and operated by E.ON/KU, which is an integral component of this ownership transfer.

On May 18, 2010, the KCDDS sent a certified letter to Jeff Derouen, Executive Director of the Public Service Commission (PSC) requesting that the PSC require E.ON to conduct an independent third party comprehensive inspection of the Dix Dam as a precondition for the proposed transfer of ownership. The PSC has not responded to our request to date, even though we believe that it falls directly under their mandate in KRS 278.020 to protect the public interest. This inspection could be funded out of a fraction of the reported \$2+ billion profit E.ON is making on the sale of said properties.

On September 8, 2010, two of our representatives gave oral and written comments at the PSC Public Hearing held to determine the approval of a certificate for acquisition or transfer of ownership, as per KRS 278.020. These comments made by our group are attached and explain our position in more detail. The PSC is currently reviewing the testimony and comments received at the hearing and will make a determination on the certificate at an undisclosed date. Time is of the essence.

The statute requires the PSC to “grant, modify, refuse, or prescribe appropriate terms and conditions with respect to the application within sixty (60) days after the filing of the application therefore, unless it is necessary, for good cause shown, to continue the application for up to sixty (60) additional days.” We believe that there is good cause to continue the application in order to prescribe appropriate terms and conditions with respect to the application, specifically until an independent third party comprehensive inspection can be conducted of the Dix Dam facility.

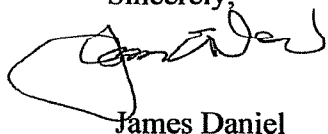
In addition to the above, our concern at the Federal level is the long-term interstate nature of the transmission of electricity by KU. This company sells electricity not only to Kentucky, but also across state lines to Tennessee and Virginia. After the merger to PPL is finalized, the interstate role of both the E. W. Brown power plant and KU may expand significantly. In fact, approval by the Federal Energy Regulatory Commission (FERC) is necessary for the completion of this merger. However, FERC also performs rigorous engineering inspections of electrical generating facilities that transmit electricity across state lines. Since Dix Dam is a hydroelectric dam that generates power sold across state lines, then why isn't this dam routinely inspected by FERC or by engineers approved by FERC?

For the reasons listed above, we have forwarded a copy of this request to Eric Holder, Attorney General of the United States, whose staff is better suited to deal with the federal issues that arise from the interstate nature of KU. This should include the need, as well as the regulatory requirement, for a rigorous FERC inspection of Dix Dam. Hopefully, any federal inspection authorized by FERC will be conducted by a professional engineer with significant experience in inspecting hydroelectric generating facilities.

We hope the PSC can act on its own at the state level to approve our request, but if they choose not to we are asking Attorney General Conway to over-rule them and enforce KRS 278.020 in order to protect the public safety of citizens that reside within the Kentucky River valley. This includes the beautiful Capital city of Frankfort, Kentucky.

If you need any additional information or documentation for any of our comments, please contact us at: James Daniel, 502 545-2792 or Guy Vansant, 502 330-6614 .

Sincerely,



James Daniel



Guy Vansant

Attachments:

James Daniel written comments, 5 pages

Guy Vansant written comments, 2 pages

CC: Eric Holder, Attorney General of the United States

David Armstrong, Chairman of Board PSC

Leonard K. Peters, Secretary, Energy and Environment Cabinet

**Kimberly D. Bose, Secretary of the Commission
Federal Energy Regulatory Commission**

***Written comments as orally presented at the PSC Public Hearing
September 8, 2010, by James Daniel, Spokesperson for the
Kentucky Council for Dix Dam Safety.***

The Kentucky Council for Dix Dam Safety (KCFDDS) requests the Kentucky Public Service Commission to exercise its authority under KRS 278.020 (5) and (6), "Approval required for acquisition or transfer of ownership", to require that e.On/KU have a comprehensive independent third party inspection conducted on the Dix Dam as a condition for approval of the ongoing acquisition of KU/LGE by Pennsylvania Power and Light from the international power consortium, e.On. This inspection is entirely appropriate and consistent with the PSC's prime directive to assure that the public interest is served, particularly those of the Dix Dam downstream residents, the citizens and property owners of the cities of Danville, Harrodsburg and Burgin, the KU ratepayers and investors. It should be noted that E.On/KU informed our group during our February 2010 meeting that the dam was not inspected prior to e.On's acquisition of KU in 2001.

We recommend the PSC require an independent third party inspection by an experienced professional engineer certified by the Federal Energy Regulatory Commission, because their unique qualifications make them particularly suitable for this type of structure. However, there may be other experts that could be used if a certified FERC inspector is not available. The need for this is echoed by KU's own general manager Jeffery Fraley in an April, 2009 letter to local emergency management director Deron Rambo, where he states their intent to conduct a "third party engineering review of past inspections and analyses of past engineering reviews." There is no record of this ever having been done.

Our group is very concerned about the integrity and safety of the 85 years old Dix Dam owned and operated by e.On/KU, which is an integral component of this ownership transfer. The following statements are not our own opinions, but rather those dam engineers who built Dix Dam and studied it for years, including the Corps of Engineers and e.On/KU's own engineers, as reflected in the official record. We are merely their messengers.

The only engineering company that has ever looked at or inspected this dam is Arcadis Engineering, or companies merged into or

acquired by Arcadis (see attachment). The Kentucky Division of Water (DOW) has been the sole regulatory authority over Dix Dam since the Corps of Engineers relinquished oversight in 1980. When our group brought our concerns to the state government and public attention nearly 2 years ago, the DOW didn't even have a complete file on it. It had been "lost" for an undetermined amount of time (over a year) before then. Much of the file has been recreated since then at our insistence.

According to the undisputed record, a catastrophic failure of this "High Hazard" dam during a 1978 type flood event would assuredly cause subsequent devastation and loss of life, property and the long-term disruption of state and local governments of downstream residents. Numerous Kentucky State Government buildings would be flooded/destroyed by the tsunami type wave in the Capitol City, as well as the total loss of utilities, shutting down state government services when they are most needed.

The complete evacuation of downtown Frankfort in less than 3 hours will be extremely difficult, if not an impossible task for the emergency planners and first responders. There are two multi-story elderly care facilities in the downtown area. The Frankfort/Franklin County Emergency Management Command Center will be rendered useless since it is located on the banks of the Kentucky River behind the floodwall, which will be overtopped by nearly 35 feet of a watery slurry carrying trees, cars, demolished structures, steel-bottomed houseboats, etc. at 20 MPH. The 5 bridges that serve the Capitol City would most likely be lost in the deluge.

A failure of this dam would also include the loss of a potable water supply for Burgin, Harrodsburg and Danville, Kentucky, forcing their abandonment (including Centre College) until a new source could be located and constructed. Several bridges along the Kentucky River would also be jeopardized, including the railroad bridge at High Bridge and I-64, which could impede interstate commerce and national defense. It would also disrupt electricity generation at the E. W. Brown plant that depends upon the lake water for cooling purposes.

This antiquated "High Hazard" Dam is over 1,000 feet long and 285 feet high and impounds Herrington Lake that is 25+ miles long. It

is located in a canyon just 53 miles above the Singing Bridge in Frankfort. It does not meet current design engineering and safety standards for rock-fill dams according to the Corps of Engineers (COE), Phase I study. Those standards were adopted since the 1925 construction of Dix Dam because they added to the safety and reliability of dams. The Dix Dam could not be built today in America because of those safety deficiencies.

According to DOW's own files, for the past 30 years the DOW has not done or ordered a subsurface inspection of the dam, as it has only provided a cursory biennial "walk over" visual inspection. The records indicate that the regulatory relationship between the DOW and KU after 1980 has been one where DOW has permitted KU to essentially regulate itself. A long promised report on the current overall condition of the dam from this agency is still in draft form, and thus unavailable to the public. Over the last year KU's consultant, Arcadis has completed a few reports including an inundation study which gives the dire news about the flooding.

Located only about 40 miles away from the Dix Dam, The Wolf Creek Dam has now developed serious problems in its karst limestone foundation that may not be repairable. The Wolf Creek Dam and Dix Dam are both built on a foundation of karst limestone. The Dix River has numerous "boils" located below the dam that indicate that conduits have formed under it allowing water to flow through the foundation limestone, which is considered a dangerous condition for any dam. During our meeting with KU, Arcadis consultants admitted that they have no direct knowledge of the limestone foundation directly underneath the dam and do not plan to investigate it.

We know that the lake level went up 40 feet in a day to the spillway gates during the recent Spring flood, leaving only 40 feet to the top of the dam. If we had had another big rain within a few days, it could have spelled overtopping. Therefore, we contest e.On/KU's assurances that "the possibility of overtopping failure is clearly so remote as to not be reasonable to postulate." This is preposterous. It does not make any more sense than the 1980 Breach Analysis, conducted by the same people now known as Arcadis, saying that it would take 29+ hours for the water to get to Frankfort (just 53 miles) in the event of a 2 hour complete washout breach of the dam, and that the level would be below our floodwall when it got

here. As the new inundation study conducted by Arcadis at our insistence makes perfectly clear, the first wave will arrive in Frankfort in about 3 hours moving at 20 MPH and it could be 35 feet over the top of the floodwall.

In addition, e.On/KU's original emergency management plan, that existed in KU's files for nearly 30 years, did not even include calling Frankfort in the event of a failure! Frankfort did not even have a copy of it until our involvement with this issue. This would seem to place the credibility of Arcadis and KU into serious question.

Regarding the effects of an earthquake on the dam or seismic stability of the canyon, the COE has warned "any disturbance may have a serious effect on the structure." One can envision Frankfort experiencing the "Big One", and then being hit by a tsunami type wave moving 20 MPH a few hours later while the rescue operations were underway. The Potential Failure Mode Analysis states that "Earthquake loading was probably not considered in the original design" and "Embankment instability could damage the face slab providing failure due to through flow." The New Madrid earthquakes occurred in 1811-12, so some scientists are saying that we are "past due".

According to the dire conditions as stated in the 2009 inundation study, a catastrophic dam failure would create loss of life and the shut down of State and City governments for an indeterminate length of time. In light of this new information, the safety of the dam is now more critical than ever. As a recent editorial in The State Journal stated, "Hopefully, the upcoming examinations will furnish more definitive answers and a new sense of security for Frankfort's riverside population. The stakes are too high to accept anything less."

History

The firm we know today as ARCADIS began in the late 1800's as Nederlandsche Heidemaatschappij in the Netherlands to increase the productivity of the land. By the mid-1950s, when Geraghty and Miller was founded, our country's demands on its natural resources were mounting as Americans looked to grow in virtually all areas. In the face of increasing environmental and infrastructure needs and with the support of our clients, the firm continued to grow and expand its capabilities merging with trusted firms in the industry. We continue to expand our role as a world-class institution with nationwide and global capabilities in developing and implementing solutions for the built and natural environment.

Timeline

- 1888 - "Nederlandsche Heidemaatschappij" is formed.
- 1920 - Olsen Associates is founded.
- 1944 - Schmidt Engineering is founded.
- 1947 - The Piedmont Group is founded.
- 1952 - Reed and Associates is founded.
- 1956 - Hensley Associates is founded.
- 1957 - Geraghty & Miller is founded.
- 1963 - Schmidt Engineering and Hensley Associates merge to form Hensley-Schmidt, Inc.
- 1964 - Geraghty & Miller expands in response to water supply problems created by a major drought in the Northeastern U.S.
- 1972 - Hensley-Schmidt expands to become one of the leading engineering firms in the Southeast U.S., completing millions of dollars of work in Federal TOPICS and 201 Wastewater Facilities plans.
- 1975 - Geraghty & Miller prepares a landmark report to Congress outlining environmental priorities for the U.S. Environmental Protection Agency.
- 1982 - The "Nederlandsche Heidemaatschappij" name changes to "Heidemij."
- 1988 - Merger between Geraghty & Miller and Reed and Associates.
- 1988 - Geraghty & Miller Initial Public Offering.
- 1989 - Olsen Associates merged with the Piedmont Group, forming Piedmont Olsen.
- 1992 - Hensley-Schmidt, Inc. merges with Piedmont Olsen to form Piedmont Olsen Hensley.
- 1993 - Geraghty & Miller merges with Heidemij.
- 1996 - Merger between Piedmont Olsen Hensley and Geraghty & Miller.
- 1998 - All former Heidemij companies change their names to ARCADIS.
- 1999 - Acquisition of Giffels Associates.
- 2000 - Acquisition of WSBC Civil Engineers, Inc.
- 2001 - ARCADIS Geraghty & Miller becomes ARCADIS G&M, Inc.
- 2002 - ARCADIS G&M becomes ARCADIS
- 2003 - Merger with Reese, Macon and Associates, Inc.
Merger with Finkbeiner, Pettis & Strout, Inc.
Merger with Lawson, Noble & Webb, Inc.
- 2004 - Merger with Bessent, Hammack and Ruckman, Inc.
Merger with Construction Design Group, Inc. and Lewis & Zimmerman Associates, Inc.
- 2005 - Merger with Greystone Environmental Consultants
Merger with Blasland, Bouck & Lee, Inc.
- 2006 - Merger with PinnacleOne
- 2007 - Merger with RTKL
- 2008 - Merger with LFR

***Written Copy of an Oral Presentation given by
Guy Vansant, a Representative of the Kentucky
Council for Dix Dam Safety, at the September 8, 2010
Kentucky PSC Hearing in Frankfort.***

My name is Guy Vansant and as a representative of the Kentucky Council for Dix Dam Safety, I sent a certified letter on May 18, 2010 to the Public Service Commission requesting a comprehensive, professional inspection of the 85 year old Dix Dam, before it's purchase by Pennsylvania Power and Light could be finalized. Quite surprisingly, our group never even heard back from the PSC concerning this request, which we believe falls directly under their mandate in KRS 278.020 to protect the public interest.

Since that time the Wolf Creek Dam in southeastern Kentucky has developed serious stability problems directly related to solution channel development in the extensive limestone karst foundation that underlies this massive structure. On July 24, 2010 the Lake Delhi Dam in Iowa was breached and underwent a catastrophic failure after a large rainstorm. This 85 year old, privately owned, former hydroelectric dam had passed all inspections by Iowa state regulators. It is now more urgent than ever for the Dix Dam to undergo a third party review by an independent professional. In fact, the last comprehensive, third party inspection was performed by the Corps of Engineers in 1978.

Our group would prefer and hope that this inspection could be performed by an experienced professional engineer approved by the Federal Energy Regulatory Commission. In fact, since Kentucky Utilities sells electricity across our state line to Virginia and Tennessee, we are left to wonder why the Federal Energy Regulatory Commission is not already performing inspections of Dix Dam.

Regardless of who finally performs this inspection, it is obvious to us who should be required to pay for it and that would be E.ON. As this deal is now structured they stand to clear at least two billion dollars in profit over the initial 3.2 billion dollar purchase price from Powergen. And that's just since 2002! In addition to that, since E.ON is selling all of their U.S. assets, this two billion dollars will all be returned to Europe to be used in improving and modernizing their European utility businesses. Once this deal is consummated, Kentuckians won't see one nickel of this two billion dollars, even though all of this profit was generated by Kentuckians every time they turned on their light switches since 2002.

In fact, the 2002 sale of L G & E and KU was a real travesty for the citizens of Kentucky, who certainly would have preferred for the two billion dollars in value created by these two outstanding, Kentucky-based utility companies to have remained in Kentucky for the advantage of all Kentuckians. With government approved decisions as short sighted as this one, is it really any wonder that our law makers can't even balance our budget and have to furlough state government employees!

As far as the proposed sale to Pennsylvania Power and Light is concerned, much higher rates for Kentuckians are sure to follow, even if there is a two year hiatus before they are proposed or approved. The high purchase price makes this inevitable. So E.ON is the big winner in 2010, happily returning to their European homeland with two billion dollars taken right out of the hands of millions of more than deserving Kentuckians.

However, our group would prefer that before E.ON collects it's enormous profit and leaves Kentucky for good, they should at least be required to fund a comprehensive, independent, professional inspection of Dix Dam. This would certainly help protect the citizens of Frankfort and many other Kentucky River dwellers from a potential catastrophe. For this to happen, it will require the Public Service Commission to enforce KRS 278.020 to it's full intent under the law and protect the public interest of the citizens of Frankfort by requiring an inspection of Dix Dam.

Since our group doesn't know if the PSC will act decisively in this matter, we are also preparing a final request to be delivered to Attorney General Jack Conway. We will ask him to over-rule the Public Service Commission and act to protect the safety and best interests of Kentuckians by requiring a comprehensive inspection of Dix Dam as a condition for any transfer of ownership.

I would like to thank the Commission for the opportunity to present this report at today's hearing.

Guy (Jeff) Vansant
Kentucky Council for Dix Dam Safety
(502) 330-6614