

Tennesse-Sierran

The monthly state newsletter for the Tennessee Chapter Sierra Club

Volume 44, Number 3 - May/June, 2013

Tennessee Stands at the Edge of a Fracking Precipice

Scott Banbury, Conservation Chair

States to the North and West of us—Illinois, Ohio, and Arkansas—are already fracked. Other surrounding states—Georgia, Alabama and Kentucky—are in the industry's sights, and it feels like there's a big bullseye painted on Tennessee. While the industry has been leaping on on Pennsylvania, Ohio and Arkansas for production, they've been greasing the gears of government here in Tennessee, establishing their right to ruin in Illinois, and beating back the opposition in North Carolina.

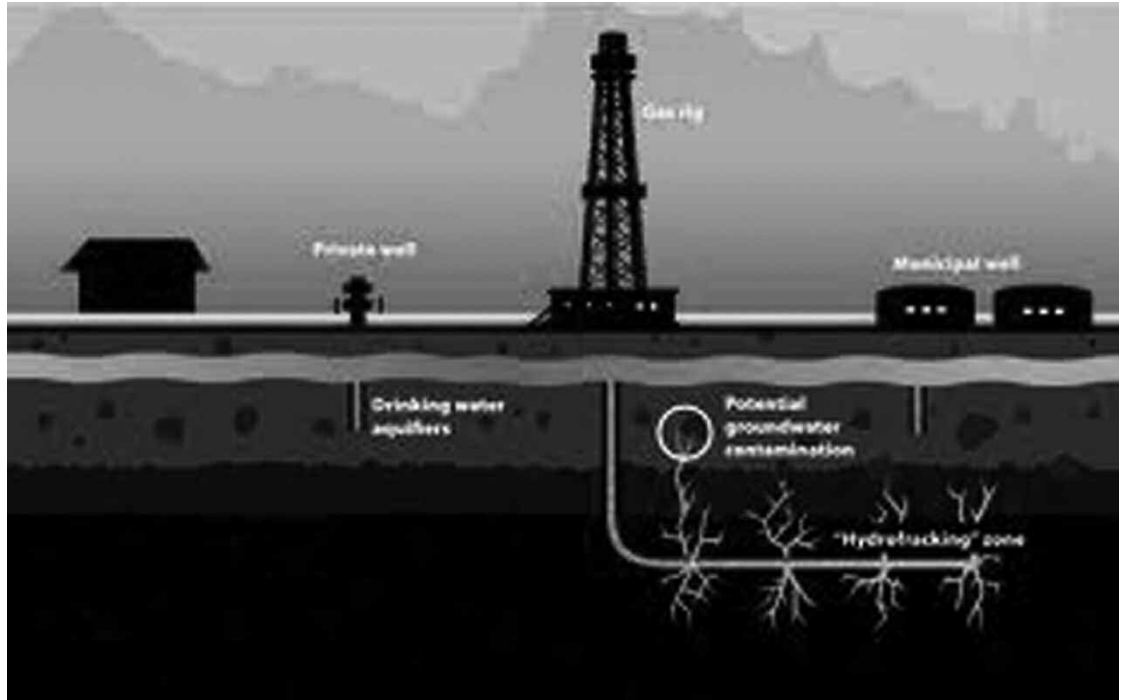
Due to current low prices for natural gas, the industry does not appear to be pulling a lot of permits in Tennessee at the moment, but with the new regulations soon to be in place and a looming export market, with accompanying price hikes, they may be booming soon.

Where we stand . . .

New state regulations on hydraulic fracturing, which are due to go into effect on June 18, 2013, do very little to protect water, land or air. These rules were drafted in 2011-12 by the Tennessee Department of Environment and Conservation, with the assistance of the Tennessee Oil and Gas Association, and approved by the Tennessee State Oil and Gas Board in September 2012--just before they became the Water, Oil and Gas Board. While many organizations, including Sierra Club, Southern Environmental Law Center (SELC), Tennessee Clean Water Network, Harpeth River Watershed Association, State-wide Organising for Community eMpowerment, Tennessee Citizens for Wilderness Planning, and more, submitted extensive comments and participated in numerous meetings, both public and private, few of our concerns were addressed and not one of our serious suggestions were incorporated.

These new rules essentially codify current practices, while ignoring mounting evidence nationwide that fracking is fraught with danger: poisoned wells and ground water from migrant methane and fracking chemicals, human and animal sickness from exposure to fumes and ground level ozone formation, polluted streams from run off from well sites and roads, and continuing contribution of fossil carbon to our atmosphere. Instead, we're offered rules that effectively deny public notice and participation; shield the industry from having to disclose the chemicals used to frack to the public, and fail to protect landowners from damages by not requiring baseline testing of area drinking water wells before the fracking commences; and by establishing an arbitrary 200,000 gallon water use threshold to trigger more stringent requirements, a requirement that may prove to be meaningless, as all of the known fracking operations work under this threshold.

The rules have been sitting on the desk of Tre Hargett, our Secretary of State (who also happens to sit on the Executive Committee of the State Building Commission,) since March 20th, where they wait for 90 days before becoming the law of the land. During this time the Joint Government Ops Subcommittee on Rules Review may be required by State Administrative Procedures to hold a public hearing. Keep your ears/eyes peeled for action alerts.



On a parallel front, the State Building Commission's Executive Committee unanimously voted without discussion to allow the University of Tennessee to move forward with their proposal to frack the school's 8,000+ acre Cumberland Experimental Forest in Morgan and Scott Counties, despite the overwhelming opposition of the environmental community and concerned neighbors. Sierra Club, Frack Free Tennessee, Student Environmental Network and SOCM turned out more than 75 people at a rally outside and dominated the public comments inside. Despite losing the vote, we made the news in Nashville, Knoxville, Chattanooga, and even the New York Times, with the Tennessean editorializing on our side.

UT now claims (since last year) that they only want to pursue oil and gas development on the property to "research" Best Practices, but the paper trail shows that they have been shopping the minerals around for at least eight years with a clear desire for revenue. The proposal is currently out for bid, and will return to the State Building Commission for final approval when UT negotiates a contract with a drilling company. That meeting should be live-ly as it has come to light that several of the State Building Commission members may have serious conflicts of interest. In the meantime, parameters of the "research" to be conducted, as private companies profit, will be advised by an Advisory Panel including representatives of the Tennessee Environmental Council, Tennessee Citizens for Wilderness Planning, Statewide Organizing for Community Empowerment (SOCM), and SELC.

Where we're going . . .

We have little reason to expect that the Joint Government Ops Committee will reject TDEC's proposed fracking rules. Therefore, the Tennessee Chapter of the Sierra Club has voted to petition for new rule making and call for a moratorium on new permits until we are satisfied that the rules adequately address our concerns.

On the UT front, we'll be watching the development of "research" parameters closely, turning folks out in opposition to future State

Building Commission meetings and engaging UT students who are working on fossil fuel divestment campaigns on their campuses. We'll also be documenting what is at stake on the Cumberland Forest and positioning ourselves to do a little research of our own.

In the field, Sierra Club, along with partners Frack Free Tennessee, United Mountain Defense and students from UTK, UTC and MTSU, will be launching an aggressive site violation and water monitoring program this summer, visiting currently permitted sites on public lands across the state. Fruits of this work will be GIS mapping of the industry's current presence in the State, outreach to impacted communities and constituent building in advance of next year's legislative session.

In Chattanooga, the Cherokee Group of the Sierra Club and Stop Fracking Around Chattanooga are rolling out a campaign to pass fracking bans in the Chattanooga City Council and Hamilton County Commission. SFAC will also be embarking on an aggressive landowner/constituent outreach campaign to advise folks of their landowner rights and the dangers of fracking to their quality of life. Their campaign raises awareness of the dangers of fracking in the Chattanooga Shale formation, which contains known concentrations of uranium and radon gas, as well as Chattanooga's legacy of being once "The Most Polluted City in America" when Congress passed the Clean Air Act in 1970, and the numerous abandoned mines that are being mitigated into perpetuity at taxpayers expense.

Regionally, the Tennessee Chapter of the Sierra Club is networking with sister chapters and others in surrounding states to make sure that we are all sharing our experience with the industry and our state governments in the hopes of avoiding mutual pitfalls or missteps. Toward this end, we have arranged for time and space to have a regional discussion on fracking at the Heartwood Forest Council at Land Between the Lakes on Memorial Day weekend, May 24-27. We have also just been awarded a Sierra Club Activist Network grant to host a state wide training conference for activists working on fracking issues, which will most likely be held

(continued on page 3)

Tennes-Sierran

The bi-monthly newsletter of the
Tennessee Chapter of the Sierra Club.

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E-mail: gvanhorn26@gmail.com
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ARTICLE SUBMISSION GUIDELINES:

Submission Target Date is May 25 for the July-August issue.
1. E-mail and e-mail attached files are preferred. Send to gvanhorn26@gmail.com either with embedded text messages, or attached files. Attached files are preferred. Word is preferred but Apple users may send articles in Pages.
2. Photographs should be scanned in a .jpg or a .tif file format then either attached to e-mail or mailed via U.S. Postal Service on a 3 1/2" diskette or CD RM. Please include a stamped, self-addressed envelope if you would like your diskette or photo prints returned.
3. Hard-copy handwritten or typewritten articles may be accepted: however, pre-approval from the Editor is required.
4. Any materials submitted via USPS mail will not be returned unless a stamped, self-addressed envelope is provided.
5. Concerns or complaints should be addressed to: Barbara Kelly, Communications Committee, bk1rivers@comcast.net.
The opinions expressed in the Tennes-Sierran are those of the contributors and do not necessarily reflect the official views or policies of the Tennessee Chapter, or the Sierra Club.

**Target Date for
July-August
Issue is
May 25, 2013.**

**All meetings and outings notices,
articles, and photographs should
be in by then.**

**Send material to
Gene Van Horn at
gvanhorn26@gmail.com**



It's time for America to get smart about energy and be less dependent on dwindling oil reserves. We need to increase our use of clean, renewable energy sources like wind and solar power. Let your voice be heard.

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**Please notify the Editor when changes
are needed**

New Design Footprints T-Shirts

Black print quotation:
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nature has not been rearranged by the
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Endangered Mussels Win Reprieve But Tennessee Valley Authority Still Embracing Dangerous Coal Plant at Gallatin

Mary Mastin

The Tennessee Chapter of the Sierra Club, Tennessee Environmental Council (TEC), Tennessee Scenic Rivers Association (TSRA) and the Center for Biological Diversity (CBD) have helped save an important endangered mussel propagation facility.

The Tennessee Valley Authority has agreed to spare one of the nation's most successful nurseries for imperiled freshwater species as part of a plan to retrofit the aging coal-fired Gallatin Fossil Plant with air-pollution control equipment. TVA's final decision to extend the plant's life and rebuild the Cumberland River Aquatic Center nursery came after the conservation groups filed a notice of intent to sue the agency under the Endangered Species Act for proposing to shutter the endangered mussel propagation facility to make room for additional coal ash and equipment.

“It's a bittersweet victory that TVA has agreed to save the aquatic center but continues to burn filthy coal,” said Tierra Curry, a biologist at the Center for Biological Diversity. “Saving the mussel nursery is obviously the right thing to do, but continuing to burn coal threatens the survival of mussels everywhere.”

In November, the Sierra Club, CBD, TEC, and TSRA filed comments urging TVA to save the hatchery while transitioning the plant away from burning coal. The groups urged TVA to spend the more than \$1 billion it will cost to upgrade the plant's pollution equipment on energy efficiency and clean-energy alternatives instead of extending the life of

Fracking in Tennessee

(continued from page 1)
in Knoxville the second weekend of September.

Last thoughts . . .

We are facing an invasion of the fracking industry. They have their eyes on exploiting oil and gas across 2/3rds of Tennessee and we are the only ones that can, or will, stop them. At stake are our water quality, air quality, biodiversity, our quality of life and the future of our planet. It is absolutely clear that we must leave all fossil carbon in the ground if we are to avert the worst of climate change. Think globally. Act locally. Join the fight.

As always, for Life,
Scott Banbury, Conservation Chair
Tennessee Chapter of the Sierra Club
901-619-8567 or smbanbury@gmail.com

Sierra Club-Tennessee Chapter Fracking Group
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Regional Discussion on Fracking at the Heartwood Forest Council at LBL
<https://www.heartwood.org/news/21/forest-council-save-the-date>



the aging power plant.

“Tennessee deserves better,” said John McFadden, executive director of the Tennessee Environmental Council. “TVA's continuing to burn coal puts much of Tennessee's drinking water and economy at risk and pushes our most endangered wildlife closer to extinction. In addition, burning coal fails to generate the kind of economic growth we could be seeing from energy efficiency and renewable energy, such as solar.”

“TVA ignored better, cleaner options for powering Tennessee,” said Louise Gorenflo, lead volunteer with Sierra Club's Beyond Coal campaign. “While leading utilities across the country are replacing their old coal plants with clean energy solutions, saving their customers money and cleaning the air in the process, TVA is taking a major step back by doubling down on a plant that's over 50 years old. The public strongly supported better options, yet TVA is sadly ignoring them.”

“TVA is determined to throw good money after bad into an old coal plant instead of looking at alternatives that will not only protect the environment but also position TVA to keep rates down in the clean energy economy of the future,” said Earthjustice attorney Abigail Dillen.

The Cumberland River Aquatic Center has been remarkably effective at rearing endangered mussels, producing 18,000 just last year. It is the most productive hatchery in the

country for rearing endangered pink mucket mussels; it also rears lake sturgeon, listed as endangered by the state of Tennessee, and alligator gar. Nearly \$800,000 in public funds has already been spent to build the center's conservation program. TVA is required by law to support the aquatic center's operations in order to compensate for damage its dam systems do to endangered wildlife throughout Tennessee.

“Freshwater mussels are amazing animals that serve as barometers of stream health and water quality,” said Charlie Wilkerson, president of the Tennessee Scenic Rivers Association. “They are a critical part of our river ecosystem and we should do everything we can to protect them.”

Freshwater mussels filter water constantly and serve an important role in improving water quality throughout Tennessee and the Southeast. More species of freshwater mussels are found in the Southeast than anywhere else in the world, but 75% of the region's mussels are now at risk of extinction. Once widely used to make buttons and jewelry, mussel shells, like trees, accumulate growth rings that can be used to determine their age. Freshwater mussels can live for centuries, making them among the longest-lived invertebrates.

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Meetings

The public is very welcome at ALL Sierra Club Meetings and Activities! All members traveling across the state should feel free to drop in and attend another Group's meetings. You will find yourself among friends and learning something interesting.

CHEROKEE GROUP (Chattanooga)

Strategy Meetings: May 13 and June 10 (Board Meeting) 2nd Monday, 6 P.M. Our Strategy Meeting is held downtown, at Second Presbyterian Church, located at the corner of E. 7th Street and Pine, 700 Pine Street - parking is free in their Pine Street lot, across the street from the church, next to the old Blue Cross (orange) building. All members of the Group and interested people are welcome -- this is where and when we plan our actions! Come add your ideas and share your concerns. To place an item on the agenda, contact Secretary Barbara Kelly at 423-718-5009 or bk1rivers@comcast.net, preferably a week ahead of our meeting.

NOTE: We have moved!! Our Program Meetings are now held at Outdoor Chattanooga, located in Coolidge Park, on the south side of the Walnut Street Bridge, at 200 River Street. Come join us -- spread the word that we've moved to the Northshore!!

May Program: 3rd Monday, May 20, 7:00 P.M. at Outdoor Chattanooga, Coolidge Park, 200 River Street, Chattanooga. Topic: Caribbean S.E.A. (Student Environmental Alliance), Mary Beth Sutton, Exec. Dir. will highlight current projects in the Caribbean. Her group works throughout the Caribbean with local partners to empower local youth to take care of their water, from the Ridge to the Reef, running camps and education programs in countries like St. Lucia and Dominica, while they also make sure Chattanooga kids are making the connection between their everyday actions and water quality. Come learn about a program helping students and teachers discover and solve local environmental problems and become a force for change!

NOTE: DATE CHANGE to avoid Memorial Day!!!

The public is very welcome and healthy snacks are served. Parking is free along the sidewalks in Coolidge Park, or paid parking in the Theatre lot. Invite your friends!! Be sure to let them know we're meeting now on the Northshore.

May 19 (Sun) Concert for the Climate, Barking Legs Theatre: Sunday afternoon, 4 p.m. -- mark your calendars for this special event, with local musicians from the Folk School and others, young and old, invited to compose a piece, play or jam with friends, kind of an open-mike concert in tribute to our efforts for the climate and work towards Energy Efficiency. We'll be filming people's personal statements/concerns and showing videos at the same time. Snacks, fun for all! For more details, check our Facebook page, Cherokee Sierra, and watch our local e-News closer to time. For more information, contact Megan Spooner, 646-764-6974, ToYourHead@hotmail.com. Co-sponsored by Cherokee Sierra and the Chattanooga Climate Action Team.

June Program: Last Monday, June 24, 7:00 P.M. at Outdoor Chattanooga, Coolidge Park, 200 River Street, Chattanooga. Topic: Tenn. Healthy Energy Campaign. Megan Spooner, local organizer, will highlight local actions to bring awareness to the incredible role that energy efficiency can make in the Tennessee Valley -- going beyond simple efforts to weatherize homes, and how that can impact the TVA budget and allow the closure of several coal plants and bring down power bills. Come learn how you can play a part in this.

The public is very welcome and healthy snacks are served. Parking is free along the sidewalks in Coolidge Park, or paid parking in the Theatre lot. Invite your friends!! Be sure to let them know we're meeting now on the Northshore.

CHICKASAW GROUP (Memphis)

Thursday, May 2, 5:30 P.M. to 7:00 P.M. Monthly First Thursday Gathering. Otherlands Coffee Bar, 641 S. Cooper, Memphis, TN

Sierra Club members, activists, and friends meet in a casual setting to talk about environmental issues and interests. For more information contact Susan

Routon at susan.routon@gmail.com or (901) 413-3888.

Tuesday, May 14, Executive Committee Strategy Meeting. A strategy meeting that is open to all members. Contact Chairperson Sue A. Williams at (901) 274-0524 or z4cmv@juno.com -- at least five days before to place an item on the agenda -- or for current location.

Thursday, May 30, 6:00 P.M. Program (5:30 P.M. refreshments and social time) Program to be announced. For more information contact Susan Routon at susan.routon@gmail.com or (901) 413-3888.

Thursday, June 6, 5:30 P.M. to 7:00 P.M. Monthly First Thursday Gathering. Otherlands Coffee Bar, 641 S. Cooper, Memphis, TN Sierra Club members, activists, and friends meet in a casual setting to talk about environmental issues and interests. For more information contact Susan Routon at susan.routon@gmail.com or (901) 413-3888.

Tuesday, June 11. Executive Committee Strategy Meeting A strategy meeting that is open to all members. Contact Chairperson Sue A. Williams at (901) 274-0524 or z4cmv@juno.com -- at least five days before to place an item on the agenda -- or for current location.

June 27, 6:00 P.M. Program (5:30 P.M. refreshments and social time) Steps you can take to make your home more energy efficient. Benjamin L. Hooks Central Library, 3030 Poplar Avenue, Memphis, TN

For more information contact Susan Routon at susan.routon@gmail.com or (901) 413-3888.

NOTE: For more details, additional events, and updates, see our website and Facebook page.

Sierra Club Chickasaw Group is now on Facebook:

<http://www.facebook.com/Chickasaw.Group/>
This is a forum for public discussion, so please feel free to post comments, raise issues, and express environmental concerns. Updates and details about upcoming events are posted here.

"Nature of Conservation" Sierra Club Chickasaw Group Cable TV Show on WYPL-TV 18 (Comcast/Xfinity) and Online at Vimeo:

Days and times vary -- see <http://www.memphis-library.org/tlc18/schedule/> (or the Comcast/Xfinity on-screen guide) for the latest schedule. Topic changes every month. For more information, or if anyone has an idea for a future program, contact Judith Rutschman at judithrutschman@gmail.com or (901) 767-5916. Previous programs are now available online at: <http://vimeo.com/user10896810>

HARVEY BROOME GROUP (Knoxville)

May 14, 7:00 P.M., Tennessee Valley Unitarian Universalist Church 2931 Kingston Pike, Knoxville, TN Climate Reality presented by Joanne Logan, UTK Professor

Joanne Logan is a professor in applied climatology in the Department of Biosystems Engineering and Soil Science at the University of Tennessee in Knoxville, TN. Her research interests include changes in rainfall patterns and their effects on droughts and floods, rainwater harvesting, and climate change education.

June 11, 7:00 P.M., Tennessee Valley Unitarian Universalist Church 2931 Kingston Pike, Knoxville, TN CAC Beardsley Community Farm by Khann Chov, Farm Manager

Cities Grow Their Own Food! That's the Beardsley Community Farm's goal. They're here to educate and encourage everyone to take part in the power of local food. There's so much to see and do at CAC Beardsley Community Farm and they need your help. Become one of hundreds of volunteers who keep the farm running, feeding those in need, and supporting everyone interested in our local food culture. Everyone has a part to play.

July 9, 2013, Tennessee Valley Unitarian Universalist Church 2931 Kingston Pike, Knoxville, TN "Reclaiming More than Riverbanks" by Barry Thacker, Director of Coal Creek Watershed Foundation

When volunteers approached local residents about plans to reclaim abandoned mine land in the Coal Creek watershed of Anderson County, they were greeted with protest signs saying, "People before fish." That encounter led to the formation of

the Coal Creek Watershed Foundation (CCWF), with a mission to improve the quality of life in the watershed. Since then, CCWF has stabilized creek banks, gotten four sites listed on the National Register of Historic Places, planted thousands of seedlings to restore the American chestnut to the watershed, and provided scholarships so 32 local students can attend college.

HBG Executive Committee meetings are held the 4th Tuesday of each month at the Tennessee Valley Unitarian Universalist Church, 2931 Kingston Pike, Knoxville, TN. All HBG meetings are free and open to the public.

MIDDLE TENNESSEE GROUP (Nashville)

PROGRAM: May 9, 7:00 P.M. at Radnor Lake Visitor Center We are excited to welcome Cory Holliday, cave and karst program director for the Tennessee Nature Conservancy. He will talk about bats, the white nose syndrome that has caused catastrophic die-offs in our nation's cave bat populations, and his work on the construction of an artificial cave next to an existing natural bat cave. Unfortunately, white nose syndrome in gray bats was found at the natural cave this past winter, and the disease could bring 90 percent mortality in three years.

The artificial cave, the first for cave-hibernating bats, can be disinfected of the fungus that causes white nose syndrome, creating a healthier haven for bats. Holliday notes that we have lost more than 5 million bats in 19 states; there is still no way to address this problem, which could have serious consequences for people. One million bats can eat 694 tons of insects per year, with a value to Tennessee agriculture at over \$313 million annually!

Tennessee has the highest number of known caves in the United States. The Nature Conservancy directs the leading cave protection program in Tennessee, which works to protect other species as well as bats because about 95% of the species are listed by The Nature Conservancy as vulnerable or imperiled.

The public is invited to this free presentation, and we hope to see you there!

PROGRAM: June 13, 7:00 P.M. at Radnor Lake Visitor Center Capturing Memories to Last a Lifetime

Tips on travel photography techniques and gear, including underwater and lightweight, to help you capture those moments you want to remember from your travels across the street to across the globe. Michael Hughes leads hiking and adventure travels from Radnor Lake to Yosemite to Costa Rica to Ireland. Along the way he captures images that help bring to life the experience of his travels. Michael shares his stories on the making of these images in hopes of helping other travelers improve their travel photography. The presentation includes sharing of images and the gear used for traveling from simple day hikes to multi-day sea-kayaking adventures.

Please join us for this program, which is free and open to the public.

STRATEGY MEETINGS: May 14 and June 11 at 6:30 P.M.

Everyone is welcome at this local issues & business meeting. Meetings are usually held at the Mad Platter Restaurant, 1239 Sixth Ave. North, Nashville 37208. (near the Nashville Farmer's Market), but there may be times we meet elsewhere. If you are not a regular attendee, please contact Betsy at 668-1977 or garberb@hotmail.com. Come a bit early because we start the meeting at 6:30, and please contact Betsy at 668-1977 to let her know you're coming. The Mad Platter is not open on Tuesday evenings, so be sure to eat before you come or bring something with you. We look forward to seeing you.

WATAUGA GROUP (Northeastern TN)

PROGRAM MEETINGS: Every second Tuesday at 7 P.M. Please contact Gloria Griffith at gla4797@earthlink.net or 423-727-4797 for more information.

Outings

CHEROKEE GROUP (Chattanooga)

Emily Marr Davis is our Outings Chair, and point-person for outings information for our Group. Our activities are always open to the public and to members of the Club from across our state! Outings are planned to take in the interests and skill levels of the participants. For more information, contact Emily at emily.marr.davis@gmail.com. Please check our Facebook page, Cherokee Sierra, for the latest on our outings during the summer months.

May 19 (Sun) Concert for the Climate, Barking Legs Theatre: Sunday afternoon, 4 p.m. -- mark your calendars for this special event, with local musicians from the Folk School and others, young and old, invites to compose a piece, play or jam with friends, kind of an open-mike concert in tribute to our efforts for the climate and work towards Energy Efficiency. We'll be filming people's personal statements/concerns and showing videos at the same time. Snacks, fun for all! For more details, check our Facebook page, Cherokee Sierra, and watch our local e-News closer to time. For more information, contact Megan Spooner, 646-764-6974, ToYourHead@hotmail.com. Co-sponsored by Cherokee Sierra and the Chattanooga Climate Action Team.

June 7-15 Riverbend Festival - As a group fundraiser we will be assisting Tennessee Heartwood at their beer booth; volunteers will get free admittance to the Festival and a T-shirt. Must be over 21 and willing to take a 1-2 hour training detailing the legalities/details of selling beer! For further information, contact Sheryl Campbell at campfamily63@gmail.com.

CHICKASAW GROUP (MEMPHIS)

Check our webpage and Facebook for additional outings and updates.

HARVEY BROOME GROUP (Knoxville)

4 May (Sat). Day Hike, Meigs Creek-Curry Mountain Loop, GSMNP. This dayhike will begin at the Curry Mountain trailhead. This trail has a relatively steep climb of over 500 feet within the first mile and 1,100 feet over its 3.3 mile length. Curry Mountain trail passes some old homesites and offers views of Mt. Le Conte in the distance. The hike will then follow the Meigs Mountain trail for about 2 miles. Along this section of the hike will be more historical remnants and an old cemetery. The hike will then take the Meigs Creek trail down 3.5 miles to the Sinks. Along Meigs Creek are rhododendron, which may be in bloom, a number of small waterfalls, and numerous small creek crossings that will test rock-hopping skills. Rated moderate. One-way drive from Knoxville: 47 miles. The hike will involve a short 2 miles car shuttle. Preregister with BJ and Bob Perlack: perlack@aol.com; 229-5027.

11 May (Sat). Take-a-Hike, Biodiversity tour (Pine-Oak), Turkeypen Ridge, GSMNP. This relatively level low elevation trail has some areas that were former settler farms but generally follows the south and east flanks of Turkeypen Ridge. There should be plenty of wildflowers in a diversity of dryer habitats as we move from exposed ridge to protected creeks including a cascade on Pinkroot branch. Total distance is 5 miles including a stretch on Schoolhouse Gap Trail and is rated easy. A short shuttle is involved. One-way drive: 47 miles. Contact Mac Post at 865-806-0980 or mpost3116@aol.com (email preferred).

18 May (Sat). Wildlife Float, Rankin Wildlife Management Area, Douglas Lake. Guided by Michael Sledjeski, we'll explore backwaters accessible only by canoe or kayak and learn about wildlife that inhabits this wetland par-

adise. The float is suitable for paddlers with reasonable flat-water paddling skills - no currents to contend with. The paddle trip will commence at 5 P.M., making a loop from the tippie area for sunset & birds flying to roost. Limited to 4 boats in addition to the leader. You can expect about 3 or 4 miles of flatwater paddling. You'll have to arrange your own canoe rentals if you need a boat. For rentals, you might try Michael Sledjeski of the Rankin Bottoms Project, email mtnsylva@earthlink.net, or one of the outfitters in the Knoxville area. This trip will be repeated on June 1 (see below) as necessary to accommodate additional participants. One-way drive: 50 miles. Preregister with Ron Shrieves: phone 922-3518; ronaldshrieves@comcast.net (email preferred).

18-19 May (Sat-Sun). Backpack, Big Frog Mountain Wilderness (Cherokee National Forest). One of the largest protected Wilderness areas (45,059 acres) in the entire Southeast is the combined Big Frog Mountain Wilderness, mainly in TN, and Cohutta Wilderness, mainly in GA, along the TN-GA state line east of Chattanooga. We will hike in the 8,082 acre Big Frog Wilderness, and will camp at a wonderful high elevation campsite just below the 4,224-foot summit of Big Frog Mountain. While hiking we'll learn about how this huge area came to be protected as wilderness. Saturday we'll hike in on the Big Frog Mountain Trail, about 5.6 miles, and on Sunday we'll exit on the Big Frog and Big Creek Trails (about 5.8 miles). Rated Moderate. One-way drive: about 115 miles. Preregister with Will Skelton: H 523-2272; C 742-2327; whshome@bellsouth.net.

1 Jun (Sat). Wildlife Float, Rankin Wildlife Management Area, Douglas Lake. This trip is similar to the one described for May 18 (with the exception that Ron Shrieves is the leader), so see that description. Preregister with Ron Shrieves: phone 922-3518; ronaldshrieves@comcast.net (email preferred).

1-2 Jun (Sat-Sun). Backpack, Mt. Rogers National Recreation Area (Jefferson National Forest, Virginia). The Mt. Rogers NRA and adjacent Grayson Highlands State Park, in southwest Virginia, make for one of the most scenic backpacking areas in the southeast, with huge open grassy meadows fringed by spruce trees and rhododendron bushes, usually flowering in June. Portions actually look like the western U.S. and we'll learn about the unique history of the area. We're going to pretty much repeat a trip last year that will start and end in Grayson Highlands State Park, making a large loop around much of the NRA's "Crest Zone." We will hike on the Appalachian and Pine Mountain Trails, and will camp at an "off-trail" campsite that's pretty much undiscovered in the heart of the area. Total mileage will be around 11 miles and possibly less if we do a short-cut. Rated Moderate. One-way drive: 170 miles. Preregister with Will Skelton:

Ten Essentials for Hiking



Sierra Club outings offer a variety of wilderness and near-wilderness experiences. It is important to realize that while all trips are guided by a leader, it is ultimately the responsibility of the individual to operate in a safe manner. To this end, the following is a list of essential items which should be modified according to the particular type of outing. These are:

1. Adequate map
2. First aid kit
3. Compass
4. Rain gear
5. Extra clothing (it is a good idea to always have a wool hat)
6. Matches
7. Knife
8. Flashlight
9. Extra food, water
10. The tenth essential: You decide what is the most important thing to bring!

H 523-2272; C 742-2327;
whshome@bellsouth.net.

15 Jun (Tues). Take-a-Hike, Biodiversity Tour (Northern Hardwoods), Flat Creek Trail, GSMNP. Few short trails are as memorable as Flat Creek Trail. Rated easy. Great views of the Smokies Range, especially Mount Guyot, from this high elevation hike through hardwood forests typical of northeastern U.S. and Canada. Total hike distance out and back is 5.2 miles and rated easy to moderate. One-way drive: 85 miles. Preregister with Mac Post at 865-806-0980 or mpost3116@aol.com (email preferred).

23 Jun (Sun). Canoe Float, Clinch River. Put in about 2 miles below Norris Dam, take out at Highway 61, near Clinton, for a distance of 11 mi. This is a relaxing float, with good current but no whitewater. We'll start early so we can do most of the river at low flow, maximizing our chances of seeing wildlife. With luck we'll observe some waterfowl. So come along and learn about the ecology of a clear-flowing river. Bring a sack lunch and even a cooler if you want. Only very basic canoe skills are necessary for this trip. Sorry, but we cannot provide canoes. Check with local outfitters for rentals. One-way drive: 25 miles. Car shuttle required. Pre-register with Ron Shrieves at 922-3518 or ronaldshrieves@comcast.net (email preferred).

29 Jun (Sat). Take-a-Hike, Biodiversity Tour (Forest Recovery After Agriculture), Old Settlers Trail, From Maddron Bald Trail to Webb Creek, GSMNP. We'll take the Maddron Bald Trail to the intersection with the start of the Old Settler's trail at 1.2 miles. From there it is 3.2 miles to the Tyson McCarter Barn and an easy exit on a gravel road to Highway 321. This was a heavily settled part of the Smokies with dozens of farms. We will see many rock walls, old chimneys that are the most prominent remains of the early settler homes, and other historical artifacts hidden in the successional growth forest. Hike distance is 4.5 miles and rated easy. One-way drive: 60 miles. Preregister with Mac Post at 865-806-0980 or mpost3116@aol.com (email preferred).

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Obama Administration to Release Cleaner Tailpipe Standards: New Rules Will Slash Smog from Cars and Trucks

WASHINGTON, D.C. -- Today, the US Environmental Protection Agency (EPA) is expected to release new cleaner tailpipe standards that will reduce smog-forming pollution, save lives and improve public health. These new safeguards will require that oil refineries reduce the sulfur content of gasoline and that automakers use advanced technology to slash tailpipe emissions of health-threatening air pollution. Today more than one in three American children live where air is dangerous to breathe because of smog, particulate matter, and other hazardous pollutants, much of which come from the tailpipes of our cars and trucks.

In response, Michael Brune, Sierra Club Executive Director, issued the following statement:

“With these expected cleaner tailpipe standards, President Obama is taking a strong step to protect our public health and secure his clean energy legacy. We have the technology to clean up our fuels and our cars and it’s critical that we put them to work to ensure Americans have the safe, breathable air they deserve.

“Cutting smog and other toxic air pollution will help American children breath cleaner air and will save lives. These new standards will save billions annually in health costs and will help free American families from some of the crippling effects of respiratory disease, asthma



attacks and other severe health problems.

“Everyone from automakers and auto workers to public health agencies and the American public recognize the connection between cleaner cars, jobs, children’s health, and a stronger economy. The only ones against these standards are

the oil companies, who oppose anything that requires them to clean up their act. Moving forward with these clean air protections is a commonsense step to improve public health and clean up our cars, while holding Big Oil accountable for their polluting ways.”

EPA Proposes Achievable Cleaner Fuels and Cars Standard, Slashing Air Pollution and Providing Extensive Health Benefits

WASHINGTON – Based on extensive input from auto manufacturers, refiners, and states, the U.S. Environmental Protection Agency (EPA) today proposed sensible standards for cars and gasoline that will significantly reduce harmful pollution, prevent thousands of premature deaths and illnesses, while also enabling efficiency improvements in the cars and trucks we drive. These cleaner fuels and cars standards are an important component of the administration’s national program for clean cars and trucks, which also include historic fuel efficiency standards that are saving new vehicle owners at the gas pump today. Once fully in place, the standards will help avoid up to 2,400 premature deaths per year and 23,000 cases of respiratory ailments in children.

Following a proven systems approach that addresses vehicles and fuels as an integrated system, today’s proposal will enable the greatest pollution reductions at the lowest cost. The proposal will slash emissions of a range of harmful pollutants that can cause premature death and respiratory illnesses, including reducing smog-forming volatile organic compounds and nitrogen oxides by 80 percent, establish a 70 percent tighter particulate matter standard, and reduce fuel vapor emissions to near zero. The proposal will also reduce vehicle emissions of toxic air pollutants, such as benzene and 1,3-butadiene, by up to 40 percent.

The proposal supports efforts by states to reduce harmful levels of smog and soot and eases their ability to attain and maintain science-based national ambient air quality standards to protect public health, while also providing flexibilities for small businesses, including hardship provisions and additional lead time for compliance.

“The Obama Administration has taken a series of steps to reinvigorate the auto industry and ensure that the cars of tomorrow are cleaner,

more efficient and saving drivers money at the pump and these common-sense cleaner fuels and cars standards are another example of how we can protect the environment and public health in an affordable and practical way,” said EPA Acting Administrator Bob Perciasepe. “Today’s proposed standards – which will save thousands of lives and protect the most vulnerable -- are the next step in our work to protect public health and will provide the automotive industry with the certainty they need to offer the same car models in all 50 states.

By 2030, EPA estimates that the proposed cleaner fuels and cars program will annually prevent up to 2,400 premature deaths, 23,000 cases of respiratory ailments in children, 3,200 hospital admissions and asthma-related emergency room visits, and 1.8 million lost school days, work days and days when activities would be restricted due to air pollution. Total health-related benefits in 2030 will be between \$8 and \$23 billion annually. The program would also reduce exposure to pollution near roads. More than 50 million people live, work, or go to school in close proximity to high-traffic roadways, and the average American spends more than one hour traveling along roads each day.

Throughout the development of the proposal, EPA met with representatives from the automotive and oil and gas industry as well as environmental, consumer advocacy and public health organizations. Based on initial feedback from these groups and a thorough rulemaking process, EPA’s proposal is estimated to provide up to seven dollars in health benefits for every dollar spent to meet the standards. The proposed sulfur standards will cost refineries less than a penny per gallon of gasoline on average once the standards are fully in place. The proposed vehicle standards will have an average cost of about

\$130 per vehicle in 2025. The proposal also includes flexibilities for small businesses, including hardship provisions and additional lead time for compliance.

The proposed standards will reduce gasoline sulfur levels by more than 60 percent – down to 10 parts per million (ppm) in 2017. Reducing sulfur in gasoline enables vehicle emission control technologies to perform more efficiently. This means that vehicles built prior to the proposed standards will run cleaner on the new low-sulfur gas, providing significant and immediate benefits by reducing emissions from every gas-powered vehicle on the road.

The proposed standards will work together with California’s clean cars and fuels program to create a harmonized nationwide vehicle emissions program that enables automakers to sell the same vehicles in all 50 states. The proposal is designed to be implemented over the same time-frame as the next phase of EPA’s national program to reduce greenhouse gas (GHG) emissions from cars and light trucks beginning in model year 2017. Together, the federal and California standards will maximize reductions in GHGs, air pollutants and air toxics from cars and light trucks while providing automakers regulatory certainty and streamlining compliance.

Once published in the Federal Register, the proposal will be available for public comment and EPA will hold public hearings to receive further public input.

Information on EPA’s notice of proposed rule-making: <http://www.epa.gov/otaq/tier3.htm>

Release Date: 03/29/2013

Contact Information: Enesta Jones, jones.enesta@epa.gov, 202-564-7873, 202-564-4355;

ESPAÒOL: [lina Younes younes.lina@epa.gov](mailto:lina.younes.younes.lina@epa.gov), 202-564-9924, 202-564-4355

Sequoyah Nuclear Plant License Renewal Facts

**Louis A. Zeller, Executive Director
Blue Ridge Environmental Defense League**

The U.S. Nuclear Regulatory Commission has received an application from Tennessee Valley Authority to renew the operating licenses for the Sequoyah Nuclear Plant, Units 1 and 2.⁽¹⁾ The Sequoyah Nuclear Plants are pressurized-water reactors designed by Westinghouse, and are located in Soddy-Daisy, Tennessee, 18 miles north of Chattanooga, on the banks of Chickamauga Reservoir. Sequoyah's two nuclear generating units have a net generating capability of 2,282 megawatts-electric. Approval of the licenses by the NRC would authorize TVA to operate each unit for an additional twenty-year period beyond the ending date of the current licenses which expire on September 17, 2020 for Unit 1 (DPR—77) and September 15, 2021 for Unit 2 (DPR—79). Sequoyah is one of the oldest nuclear plants operated by TVA; construction began in 1969 and was not completed until 1980.

Based on the age of the plant and critical safety factors—flooding, earthquake and plant design—we are convinced that Sequoyah's license should not be extended.

Flood Risk

TVA's Sequoyah is at risk from flooding which could result from the failure of upstream dams. The consequences of such an event on the plant would be severe. Recently, NRC issued six citations to TVA and placed the plant under its yellow safety flag, its second-highest level. A U.S. Nuclear Regulatory Commission Inspection Report issued March 12 states:

“The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. The enclosed inspection report discusses one finding with two Apparent Violations (AVs) associated with the site flood mitigation strategy.”⁽²⁾

In 2012 the Nuclear Regulatory Commission issued an immediately effective order indicating that, as a result of the lessons learned from the March 2011 accident at Fukushima Dai-ichi, certain actions were required by nuclear power plant licensees.⁽³⁾ The order required new measures to reduce uncertainties resulting from beyond-design-basis events.” The NRC determined that all power reactor licensees and construction permit holders must develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and SFP [spent fuel pool] cooling capabilities following a beyond-design-basis external event.” TVA's updated calculations showed flooding at Sequoyah could rise 2.4 feet higher than that plant was designed to handle. Earlier assumptions were based on decades-old data that underestimated the potential severity of flooding. But TVA's remedy, sand and gravel baskets placed on upstream riverbanks, are stopgaps. More substantial measures for TVA's nuclear fleet would cost tens of millions of dollars, and flood-proof modifications could top a billion dollars.

The Fukushima meltdown was caused by a flood of water, a tsunami, which disabled the emergency diesel backup generators necessary to keep the reactors from overheating when electric power failed. TVA has not implemented necessary precautions to prevent similar disaster in the Tennessee Valley. The NRC's spokesman agreed: “Our inspectors found that their [TVA's] strategies were not adequate.”⁽⁴⁾

Earthquake Risk

The Eastern Tennessee Seismic Zone, which extends from southwest Virginia to northeast Alabama, is considered to be one of the most active seismic areas east of the Rocky Mountains. It has the potential to produce large magnitude earthquakes. Recent large earthquakes include a magnitude 4.6 that occurred in 1973 near Knoxville and the Fort Payne Earthquake, also a magnitude 4.6, which occurred in 2003 near Scottsboro, Alabama.

Nuclear Regulatory Commission Regulatory Guide 1.208, A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion, states that:

“While the most recent characterization of any seismic source accepted by the U.S. Nuclear Regulatory Commission (NRC) staff can be used as a starting point for analysis of a new facility, any new information related to a seismic source that impacts the hazard calculations must be evaluated and incorporated into the probabilistic seismic hazard analysis (PSHA) as appropriate based on the technical information available.”

Eastern Tennessee Seismic Zone models from the 1986 Electric Power Research Institute Seismicity Owners Group report may not adequately characterize the potential for large earthquakes. This concern arises from the low probabilities for larger earthquakes from the seismic sources assigned by the EPRI/SOG expert teams in the mid-1980s.⁽⁵⁾

The Eastern Tennessee Seismic Zone is laced with ancient faults that developed as the Appalachian Mountains formed several hundred million years ago. However, faults mapped at the surface are poorly located at earthquake depths. This leads to uncertainty. Because few earthquakes in the Eastern Tennessee Seismic Zone can be linked to known faults, it is difficult to predict if and when a specific fault could slip and cause an earthquake. Nevertheless, if a fault lies under the Valley and Ridge region of Southern Appalachia, the possibility of an earthquake with a magnitude of 5.0 and higher is possible. An earthquake with a magnitude of 5.0 would cause serious damage to the Sequoyah nuclear plant.

Unsafe Plant Design

The containment buildings of nuclear reactors must do two things without fail: contain radioactive emissions during an accident and prevent intrusion from outside forces such as wind driven objects and man-made missiles. Sequoyah's nuclear reactors utilize ice condenser containment structures. Ice condenser nuclear reactors utilize baskets of ice to reduce heat and pressure in the event of an accident, preventing damage to the containment and leaks of radioactive steam. Typical nuclear power plants have concrete containment several feet thick, but ice condenser reactors substitute a steel shell of smaller volume and less ability to withstand pressure. Ice condenser reactors economize on concrete and are less robust because of this construction method.

Sandia National Laboratories evaluated the reactor containment structures similar to those at Sequoyah Units 1 and 2 and found that if an accident involving hydrogen ignition occurs, a common characteristic of nuclear emergencies, the concrete containment will almost certainly fail. In fact, ice condenser plants are at least one hundred times more vulnerable to early containment failure than other commercial pressurized water reactors in the U.S.⁽⁶⁾ Ice condenser reactors are vulnerable to other problems. Dr. Edwin Lyman, now at the Union of Concerned Scientists, wrote:

“However, even if the ice condensers do work as they are supposed to (which in itself is a questionable proposition), containment failure can still occur as a result of the combustion of hydrogen gas, which would be generated in large quantities during severe accidents when the metal cladding on fuel rods reacts with coolant water. During the Three Mile Island 2 (TMI-2) accident in 1979, a large amount of hydrogen was released to the containment and burned, although the pressure increase did not lead to rupture of TMI-2's large dry containment. The ice condensers not only cannot reduce the risk of hydrogen combustion but also can actually increase it, because they divide the containment volume into small compartments where hydrogen gas can more readily reach explosive concentrations.”⁽⁷⁾

Dr. Lyman points out that the typical failure pressure for ice condenser containments is about 63 pounds per square inch. Pressure from hydrogen combustion in a nuclear reactor can reach 110 pounds per square inch. He concludes, “Therefore, hydrogen burns can easily over-pressurize and rupture ice condenser containments.”⁽⁸⁾

Sequoyah's nuclear reactors are under consideration for plutonium fuel. In the early days of the U.S. Department of Energy's Surplus Plutonium Disposition Program, DOE contracted with two electric utilities to use plutonium fuel in their power plants: Duke Energy and Virginia Power. But both withdrew their reactors from the program. Now TVA appears to have stepped into the breach. In the 2012 Surplus Plutonium Disposition Supplemental Environmental Impact Statement,⁽⁹⁾ the DOE posits the use of Sequoyah and Browns Ferry for the experimental fuel. However, there are critical differences between plutonium fuel and conventional uranium fuel which should disqualify these TVA reactors.

The critical problem is that plutonium is fundamentally different from uranium. With plutonium fuel loaded into any commercial reactor, the power station becomes more dangerous because plutonium releases energy in a different way than uranium. Plutonium has a higher neutron flux, meaning higher energy particles at higher speeds. This and other nuclear phenomena break down metal reactor parts quicker; a process called embrittlement. This weakening of metal components would be accelerated in any reactor using plutonium fuel. Greater embrittlement means the reactor vessel may fail under circumstances that would otherwise not cause a problem. If and when failure happens and radioactive materials are released from the plant, more dangerous radionuclides are released from a reactor containing plutonium fuel, including greater quantities of radioactive elements which pose hazards to human health. Embrittlement is a safety issue which must be addressed before license renewal at the aging Sequoyah plant.

The failure of Sequoyah's ice condenser reactor containment brought about by the use of plutonium fuel would result in devastating consequences to public health. In its review of the program, the NRC's own reactor safety committee stated:

“Public attention has been drawn to the higher actinide inventories available for release from MOX than from conventional fuels. Significant releases of actinides during reactor accidents would dominate the accident consequences. Models of actinide release now available to the NRC staff indicate very small releases of actinides from conventional fuels under severe accident conditions. (emphasis added) ⁽¹⁰⁾

No matter the utility or type of reactor, plutonium fuel has greater quantities of plutonium and other hazardous radioactive isotopes such as Americium 241 and Curium 242—actinide elements that would cause additional harmful radiation exposure to the public.

(1) The application, dated January 7, 2013, from Tennessee Valley Authority was filed pursuant to Section 103 of the Atomic Energy Act of 1954 and part 54 of Title 10 of the Code of Federal Regulations.

(2) Letter from NRC to TVA Re: Sequoyah Nuclear Plant - NRC Inspection Report 05000327/2013009, 05000328/2013009; Preliminary Yellow Finding, and Apparent Violations, March 12, 2013

(3) Order Number EA-12-049 “Order Modifying Licenses with Regard to Requirements for Mitigation Strategies For Beyond-Design-Basis External Events to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status,” March 12, 2012

(4) “TVA cited for flood prevention violations,” Chattanooga Times-Free Press, March

(continued on page 8)



Louise Gorenflo

40% of U.S. carbon emissions come from generating electricity, 78% of that coming from coal. Coal mining destroys habitat by disturbing the earth's surface, burying streams, and forever changing mountains. The burning of coal releases an alphabet soup of toxins into our air, land, and water, leaving hills of wet coal ash looming along our waterways.

Sierra Club's Beyond Coal Campaign has successfully stopped 90% of the more than 150 new coal plants planned for under the Bush Administration. It now has turned to closing down one-third of the U.S. coal fleet and to ending coal exports.

Sierra Club is working with TVA to help develop a sustainable energy future for Tennessee. We are encouraging TVA to take steps toward more energy efficiency and renewables while reducing its reliance on coal, nuclear, and natural gas.

Relying more on energy efficiency will benefit our public health, create local jobs, and reduce the energy burden on lower income families. The Campaign finds that many of the top distributors want to get more involved in delivering energy efficiency to us, their customers, and want TVA to expand its energy saving offerings.

However, TVA remains behind the other utilities. TVA continues to operate a limited energy efficiency program, less than one-eighth of what the leading utility offers. Even in the southeast, TVA lags behind its peers. Duke Energy now has an energy efficiency program more than twice larger than TVA's.

As Sierra Club pointed out to TVA, if it invested the \$1.1 billion it has slated to spend on install scrubbers on the Gallatin into energy efficiency, within a three to four year time period, TVA will have saved enough energy to completely shut down the Gallatin plant. Moving ahead with energy efficiency instead of fixing up old coal plants will actually reduce our power bills. This is the power of energy efficiency.

Energy efficiency can power TVA cleanly, reliably, and inexpensively. TVA did its own study on its energy efficiency potential and reported it could quadruple the size of its current energy efficiency program. TVA knows how to achieve this level of energy savings but refrains from doing so. TVA's resistance to energy efficiency is costing all of its customers as it continues to invest in energy resources that are way more expensive than energy efficiency.

In a recent poll commissioned by Sierra Club, more than 70% of TVA customers prefer energy efficiency and clean energy to coal. More and more people know that the Age of Coal is over with. The sustainable energy path will take us into the future and help teach us how to live on Earth without harming it.

The TN Healthy Energy Campaign now has three contract organizers working in four of the largest TN distributor areas: Chattanooga, Memphis, Nashville, and Middle TN. Their job is to move distributors to influence TVA to give us more energy efficiency. To learn more about the TN Healthy Energy Campaign and what it is doing in your neighborhood, visit www.tnclimateaction.net.



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Sequoyah Nuclear Plant License Renewal Facts

(continued from page 7)

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- (5) Seismic Hazard Methodology for the Central and Eastern United States, Volumes 1-3, Revision 1, Electric Power Research Institute, NP-4726-V1P1, July 1, 1986, <http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?productId=NP-4726-V1P1>
- (6) NUREG/CR-6427, Assessment of the Direct Containment Heating Issue for Plants With Ice Condenser Containments, April 2000
- (7) "Plutonium Fuel and Ice Condenser Reactors: A Dangerous Combination," Edwin S. Lyman, PhD, October 19, 2000, <http://www.nci.org/e/el-ice-condensers.htm>
- (8) ibid
- (9) Federal Register Volume 77, Number 145, Pages 44222-44224, July 27, 2012
- (10) Letter from Advisory Committee on Reactor Safeguards to US Nuclear Regulatory Commission Chairman, May 17, 1999

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