ENVIRONMENTAL ENGINEERING NEWSLETTER

27 MAY 2013

Please be aware any Newsletter URL ending in **020701.pdf** is available for downloading only during the six days following the date of the edition. If you need previous Newsletter entries contact George at ghh@att.net.
Please Note: This newsletter contains articles that offer differing points of view regarding climate change, energy and other environmental issues. Any opinions expressed in this publication are the responses of the readers alone and do not represent the positions of the Environmental Engineering Division or the ASME.
George Holliday

This week's edition includes:

1) ENVIRONMENT – A. U.S., OTHER ARCTIC COUNTRIES SIGN OIL SPILL RESPONSE PACT

The U.S. and the other members of the Arctic Council have signed a deal creating the necessary preparations and response for future oil spills. The pact would "substantially improve procedures for combating oil spills in the Arctic," according to the council.
http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/26939863

B. TURNING TRASH INTO RENEWABLE ENERGY TREASURE

May 30, 2013 / 2:00PM – 3:00PM U.S. ET

Americans generate about 250 million tons of trash per year – that's more than four pounds per person each day. Recycling helps, but modern waste-to-energy technologies are being developed that could turn trash into renewable electricity or fuel for vehicles.

Join presenters from The City University of New York (CUNY), Covanta Energy, and Norton Engineering to learn about the promises and challenges of waste-to-energy technology.

Featured Presentations:

Thermal Conversion of Waste to Energy and Products

Dr. Marco Castaldi, Associate Professor, Chemical Engineering Department
City College (CCNY) of The City University of New York
Dr. Castaldi's presentation will focus on current waste combustion systems and newer thermal conversions systems such as gasification and waste to liquids production. Information on emissions, relation to renewable energy production, public perception and specific performance will be presented and discussed in detail.

Solid Waste Management Alternatives

John Norton, Owner, Norton Engineering LLC
Mr. Norton will cover landfill hauling and its inherent environmental and social negatives; recycling; integrated solid waste management; waste-to-energy operator certification; and the nature of American garbage versus third world garbage.

Gasification of Municipal Solid Waste

Steve Goff, Vice President of Research and Development,
Covanta Energy Corporation
Mr. Goff's presentation will cover the basic chemistry of gasification as compared to combustion; the challenges with processing municipal solid waste and Covanta's approach for designing a commercially viable gasification process for it; energy balance in gasification with consideration of external energy inputs to the process and the potential use of oxygen enriched air; and Covanta's new CLEERGAS® commercial system.

Arnie Feldman

Moderated by **Jeffrey Winters, Senior Editor, Mechanical Engineering Magazine**

C: INTERIOR DEPT. ROLLS OUT PROPOSED FRACKING REGULATIONS

The Department of the Interior released proposed rules for hydraulic fracturing on federal lands, which cover new well-integrity standards and the disclosure of chemicals used in the drilling technique. Industry groups criticized the plan as they believe such regulation is best left to states. "While changes to the proposed rule attempt to better acknowledge the state role, [the Bureau of Land Management] has yet to answer the question why it is moving forward with these requirements in the first place," said Erik Milito, the American Petroleum Institute's upstream director.
http://fuelfix.com/blog/2013/05/16/feds-make-concessions-to-oil-industry-in-new-hydraulic-fracturing-rule/

D. EPA TO PUBLISH PROPOSED VEHICLE EMISSIONS REDUCTION RULE

The Environmental Protection Agency will publish a draft rule that would mandate refiners to reduce the sulfur content of gasoline by more than 60% by 2017. "Few other national strategies exist that would deliver the same magnitude of multi-pollutant reductions projected to result from the proposed Tier 3 standards," the agency said. The American Petroleum Institute is against the rule, saying it would boost fuel prices.
http://thehill.com/blogs/regwatch/energyenvironment/300687-epa-to-publish-draft-low-sulfur-gas-rule

2) HEALTH. A. VICTIMS: MARINES FAILED TO SAFEGUARD WATER SUPPLY

A simple test could have alerted officials that the drinking water at Camp Lejeune was contaminated, long before authorities determined that as many as a million Marines and their families were exposed to a witch's brew of cancer-causing chemicals.
http://www.jamestownsun.com/event/article/id/186715/

3) SAFETY. A. FALL FROM DERRICK

A derrickman was working on the derrick board of a rig. After taking a break, the derrickman climbed back up to the derrick board and did not attach his fall protection device after unhooking from the climb assist. The worker grabbed the first stand of pipe with the tail rope which helped keep his balance as the elevators were being sent up to attach to the pipe. When he released the tail rope, he lost his balance and fell 90 ft. to the rig floor, where he was fatally injured
http://www.eandp-environment.net/Safety/Safety020701.pdf

4) TRANSPORTATION. A MIT PROFESSOR PLAYS DOWN ENVIRONMENTAL CONCERNS ABOUT KEYSTONE XL

Environmental concerns about TransCanada's Keystone XL pipeline are overblown, said Christopher Knittel, a Massachusetts Institute of Technology energy economics professor. The project's critics are incorrect because they are comparing oil sands with U.S. refined oil, he said. "The question is what oil will replace the tar sands, and it is not the average oil that is sold in the U.S. It's very likely to be Venezuelan oil, which is dirtier than tar sands," Knittel said.
http://blogs.marketwatch.com/election/2013/05/16/keystone-wont-hurt-damage-environment-as-much-as-feared-mit-prof-says-at-hearing/

B. LATEST PIPELINE SPILL IS MOSTLY CONTAINED

By ALISON SIDER

Crews worked to clean up some 2,500 barrels of crude that spilled over the weekend at an oil-storage terminal in Cushing, Okla., the third-biggest crude spill seen in the U.S. this year.
The leak, at an Enbridge Energy Partners LP EEP +1.30% pipeline connected to one of the more than 85 tanks at Enbridge's Cushing storage facility, comes as many pipeline companies seek to expand their networks to accommodate growing energy production in North America. At least

one major project, the Keystone XL pipeline proposal to connect Alberta's oil sands with Texas refineries, is facing significant backlash from environmentalists concerned about leaks.
The Enbridge spill took place at a crude-gathering site where crews are ready to handle emergencies. It follows the rupture in March of Exxon Mobil Corp.'s XOM +0.29% Pegasus pipeline, which spilled an estimated 5,000 barrels of heavy Canadian crude into a Mayflower, Ark., neighborhood. Earlier that month, more than 5,000 barrels of oil leaked from a Lion Oil Trading & Transportation Inc. storage tank in Magnolia, Ark., with some flowing into a bayou. Also in March, a Chevron Corp. CVX +0.36% pipeline leaked an estimated 600 barrels of diesel near a freshwater lake in Utah's Willard Bay State Park. And an inactive Marathon Petroleum Corp. MPC -0.72% pipeline leaked about 500 barrels of diesel in Indianapolis earlier this month.
The recent spills could chip away at the local and regulatory support needed by pipeline companies to get projects approved, said Amy Myers Jaffe, executive director of energy and sustainability at University California, Davis, Graduate School of Management. "The more accidents there are, the more resistance you're going to see," she said.
Enbridge said it is stepping up its inspection and monitoring systems to meet higher expectations of governments, regulators, landowners and the public. "All the expansion activity we're undertaking is happening against a backdrop of heightened public awareness," a company spokesman said in an email.
Enbridge said the Cushing spill, reported Saturday, was isolated and that oil didn't make it past containment systems. By Monday, 2,400 barrels of oil and water had been recovered, the company said, adding that the cause was being investigated.
Brigham McCown, a former deputy administrator of the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration, said the spill proves safety measures at facilities are working. Earlier this year, PHMSA proposed a $78,700 fine against Enbridge for problems with tank-inspection procedures and corrosion control on some tanks in Cushing. Enbridge spokesman Terry Larson said those issues were unrelated to Saturday's spill.
A version of this article appeared May 21, 2013, on page A3 in the U.S. edition of The Wall Street Journal, with the headline: Latest Pipeline Spill Is Mostly Contained.

COMMENTS:

A. THE WEEK THAT WAS: 2013-05-11 (MAY 11, 2013)

By Ken Haapala, Executive Vice President, Science and Environmental Policy Project (SEPP)

Assessing Climate Science: On her web site, Judith Curry posted sections of a March essay by Lennart Bengtsson suggesting that the Climate Establishment, those supporting the UN Intergovernmental Panel on Climate Change (IPCC) and its assertion that human (anthropogenic) carbon dioxide (CO2) emissions are causing unprecedented and dangerous global warming (carbon based AGW), should take the current pause in warming to reassess the climate science. Global warming has not occurred as projected by the models. For example, Bengtsson states that about 25 years ago the MPI model in Hamburg projected the warming since the end of the 19th century should be about 1.25º C; but, it has been only about 0.75º C. Since the theory of greenhouse warming asserts that doubling of CO2 will cause a warming of about 1.1º C, the models used by the IPCC include an amplification of the warming by a positive feedback mechanism. With no atmospheric warming for a decade and no surface warming (according to the IPCC) for 17 years, there are significant problems with the models, which,

according to Bengtsson, from 1979 to 2012 forecast an atmospheric warming about three times greater than observations.
As Curry points out, Bengtsson is part of the Climate Establishment, thus his criticisms should be carefully considered by the Establishment. However, thus far, his criticisms appear to be ignored. As Bengtsson states: "The real genuine interest in climate and climate processes is fading away as the interest is confined to the concept of climate typical of the general public or rather I shall say the predominant or politically correct concept of climate."
In her comments Curry expresses her great concern for the overemphasis on, what she calls, climate model taxonomy – the analysis of the outputs of the models which infer catastrophic outcomes far in the future. Here the administrators of the government funding have been severely deficient. The emphasis should be on the validation of the models including rigorous testing of the assumptions. As Curry states, it is far too easy to get research, with no solid testing of assumptions, published in journals such as *Nature* and *Science*, while the hard research problems are ignored. Please see links under Seeking a Common Ground.
****

Public Enemies? P. Gosselin reports that the German Ministry of the Environment published a 123 page pamphlet on global warming/climate change. "According to the UBA, all the climate doubt stems mainly from the USA. Beginning on page 100, the UBA lists the Americans responsible for "spreading doubt and false information", among them: ExxonMobil, Fred Singer, Sallie Baliunas and Willie Soon, Frederick Seitz, Joe Barton, Pat Michaels, John Christy, Ross McKitrick and the Heartland Institute. The UBA cites the Union of Concerned Scientists and a one-sided Die Zeit smear from November 2012 as its reliable sources for this information."
Draw your own conclusions. Please see link under Defending the Orthodoxy.
****

Another 97%: The Climate Establishment seems to be fascinated with the claim that 97% - 98% of the scientists agree … Previously, both *EOS* and the *Proceedings of National Academy of Sciences* published surveys of highly questionable quality that stressed that "97% - 98% of scientists agree..." [TWTW Sep 1 & Sep 8, 2012] Now, *Environmental Research Letters* published a survey of the abstracts by a team headed by John Cook, who blogs on the misnamed web site Skeptical Science. The survey covered the years from 1991 to 2011 and searched on the topics "global climate change" and "global warming." The survey found 11,944 abstracts, of which 66.4% expressed no position on carbon-based AGW, 32.6% endorsed carbon-based AGW, and 1% rejected AGW or were uncertain about the cause. The 32.6% immediately became "97% of scientists agree …"
Based on separate reports by the Government Accountability Office and the Congressional Research Service, SEPP estimates that the US Federal government has spent about $140 to $150 Billion on global warming/climate change issues from FY 1993 to 2012. Little, if any, of this funding went directly to skeptics. It should be noted that the satellite observations of atmospheric temperatures are part of this funding. Further, it would be interesting to see how many of the 32.6% of the papers were based on analysis of the outcomes of IPCC models, which have never been verified and validated, thus are little more than sophisticated speculation. On their web sites, Anthony Watts and Jo Nova have devastating comments regarding the survey.
If anything, the survey demonstrates how much of climate science is of questionable quality. Many of the papers, such as those which analyze the long range results of the models, make the logical error of *petitio principii* – they assume that which must be proven is true. Please see links under Communicating Better to the Public – Make things up.

****

Cloudy Issue: The abstract of an article in *Meteorology and Atmospheric Physics* states: "Recent measurements of the cosmic ray intensity show that a former decrease with time has been reversed. Thus, even if cosmic rays enhanced cloud production, there would be a small global cooling, not warming." However, the statement appears to be exactly consistent with the solar-cosmic ray hypothesis and the current lack of warming.

The abstract further states: "…the results do not lead to the conclusion that cosmic rays affect atmospheric clouds significantly, at least if H2SO4 is the dominant source of aerosols in the atmosphere." However, the effectiveness of aerosols in forming clouds is being challenged.

Please see links under Commentary: Is the Sun Rising? and Seeking a Common Ground.

****

EPA: Until late last week, the Republicans on the Senate Committee on Environment and Public Works have held up the confirmation of Regina (Gina) McCarthy for Administrator of the Environmental Protection Agency. McCarthy is the EPA assistant administrator for the Office of Air and Radiation, which has issued numerous air quality regulations without revealing the scientific basis for the regulations. The Republicans have taken an (unusual?) principled, stance demanding transparency on EPA regulation making, for which they have been been roundly criticized by the administration and in the general press.

On April 10, they sent a letter outlining their five major concerns (copied from the web site on May 14 with the assessment of the response by the EPA).

1. That the EPA issue new guidance drafted by its Office of General Counsel that clearly outlines: a) standards and procedures to ensure that all official business is conducted solely on official government email accounts; and b) standards and procedures for responding fully, truthfully, and in a timely manner to FOIA requests and Congressional inquiries. EPA's response is a step forward.

2. That all private email accounts of Regina McCarthy are exhaustively reviewed, and that all emails regarding official EPA business are produced unredacted to the committee. If no such emails exist, that an affidavit stating that fact by McCarthy be produced for the committee. In addition, we are asking for transparency on specific documents the committee has obtained in unredacted form. The EPA has been wholly unresponsive.

3. That underlying data used to promulgate Clean Air Act rules be made public so the public can independently examine cost/benefit and other issues. That the EPA release a full set of data files for the American Cancer Society Study; the Harvard Six Cities Study; HEI/Krewski et al. 2009; Laden et al. 2006; Lepeule 2012; and Jerrett 2009. The EPA has been wholly unresponsive.

4. That written assurances be given the committee that the EPA will conduct cost/benefit analyses as required under various executive orders and as required by the CAA, Section 321(a), specifically through issuance of new guidance mandating "whole economy" modeling on major rules. The EPA has been wholly unresponsive.

5. That all petitions for rulemaking or the promulgation of guidance received by the Agency, including by the Office of the Administrator and/or by the Office of General Counsel, be tracked, listed, and made publicly available, including copies of the documents, via readily available links

on the Agency's website. This information is to be regularly updated. That all notices of intent to sue received by the Agency, including by the Office of the Administrator and/or by the Office of General Counsel be tracked, listed, and made publicly available, including copies of the documents, via readily available links on the EPA website. This information is to be regularly updated. The EPA has partially responded. [This relates to "sue and settle" with no opportunity for those most affected to challenge.]

More detail can be found at:
http://www.epw.senate.gov/public/index.cfm?FuseAction=PressRoom.PressReleases&ContentRecord_id=F52A53AB-FAA7-77E3-2E57-DF15459B241B
****

Green Jobs v. Black Gold? For years politicians in many countries have been promising prosperity and high paying green jobs from the development of renewable energy, such as solar and wind power. The green jobs are proving to be as illusionary as the reliability of wind.
Largely unnoticed by Washington, for a decade deep underground hydraulic fracturing and horizontal drilling of dense shale for oil and natural gas has been creating prosperity and jobs in the regions in which it is occurring. These activities are regulated by the several states and there is no verified instance in which fracturing has resulted in contamination of well water.
Some in Washington are finally taking notice and the Department of Interior has announced proposed regulations for permitting these activities on Federal lands. It remains to be seen how severe the final regulations will be.
Senator Inhofe has an amusing take on the situation and the possibility of Iran building an atomic bomb with his proposed "Iranian Oil Replacement Zones." Impose a total embargo on the export of oil by Iran and designate Federal lands for the production of 1.25 million barrels of oil per day to offset current Iranian exports. Please see links under Energy Issues, Alternative Energy and Washington's Control of Energy.
****

Snowpack: Governor of California Jerry Brown has blamed the wildfires in California on global warming, and the LA Times amplified the concern by reporting the snowpack in the Sierra Mountains is 17% of normal. Official reports in March put it at 67% of normal. However, to prepare for the summer, the critical measurement is how much water in the reservoirs, not how much is in the snowpack. Reports put the level of reservoirs at or above normal thanks to November – December rains. In late February, the largest, Lake Shasta, was at 79%, or 107% of normal.
One of the big problems those who manage the water resources face every year is how much to draw down the reservoirs in the fall to prepare for the spring floods. Accurate weather prediction would be a boon for them. One would think journalists at the LA Times would know how they get their water. The same applies for much of the western US, where all the major rivers are dammed. Please see links under California Dreaming.
****

400 ppm: It appears that the reports last Friday putting the CO_2 concentration in the atmosphere at 400 parts per million may have been premature. Of course, there were many alarmist reports stating it is the highest in human history, which is technically true. However, it was about 3000 ppm 65 million years ago and the ancestors of all current species of plants and animals survived. Please see links under The Magic 400?
http://www.sepp.org/twtwfiles/2013/TWTW%205-18-13.pdf

B. CO2 APPROACHES 400 PPM, YET TEMPERATURES REMAIN FLAT

Global warming alarmists are breathlessly filling the media with sensationalist reports of carbon dioxide levels approaching 400 parts per million (that's 4 parts per 10,000, or a 0.0004 share of the atmosphere, versus 3 parts per million, or a 0.0003 share of the atmosphere, prior to the Industrial Revolution). The central message of alarmist global warming theory is that higher atmospheric carbon dioxide concentrations will cause catastrophic global warming. A real-world look at how global temperatures are responding to the rise in atmospheric carbon dioxide levels tells a different story.

Although atmospheric carbon dioxide levels were much higher for much of the Earth's history, 400 ppm is arguably the highest level in at least several hundred years and perhaps thousands of years. Global warming alarmists assert atmospheric carbon dioxide levels were approximately 280 ppm prior to the Industrial Revolution and up until the year 1900 or so, meaning atmospheric carbon dioxide levels rose a little more than 40 percent during the past hundred-plus years.

Assuming for the sake of argument the alarmists' dubious claim that global temperatures rose by as much as 0.8 degrees Celsius since 1900, and also assuming for the sake of argument the dubious assertion that rising atmospheric carbon dioxide levels are entirely responsible for the gradual warming since 1900, this reveals that a 40 percent increase in atmospheric carbon dioxide levels created merely 0.8 degrees Celsius of warming since 1900. This shows much lower climate sensitivity to atmospheric carbon dioxide levels than claimed by global warming alarmists.

Nor is there any sign of a recent increase in the pace of temperature rise. Global temperatures have been flat for approximately 15 years now, even though atmospheric carbon dioxide levels rose more than 40 ppm (or more than 10 percent) during that time.

Rather than being a harbinger of doom and gloom, the approaching 400 ppm carbon dioxide threshold presents still more evidence that humans are not creating a global warming crisis.

http://www.esrl.noaa.gov/gmd/ccgg/trends/

C. COOLING TEMPERATURES BRING CLIMATE REFUGEES?

Suzanne Goldberg, a consistently alarmist journalist with the U.K. *Guardian*, wrote a sensationalist article claiming global warming is creating climate refugees in Alaska. Goldberg's article is the latest rage on alarmist blogs and in the establishment media. However, while Goldberg claims global warming is creating Alaskan climate refuges, Alaskan temperature records show the state is in a deep and prolonged cold spell that is hammering state residents.

http://www.guardian.co.uk/environment/interactive/2013/may/13/newtok-alaska-climate-change-refugees

D. NENANA ICE CLASSIC REVEALS COOLING ALASKA

For nearly a century, Alaskans have kept track of the date the ice finally breaks on the Nenana River and spring unofficially arrives. A large tripod is placed on ice at the junction of the Tenana and Nenana Rivers. Once the tripod falls through the ice or is whisked away by the current, residents note the date for posterity and declare an end to that year's Nenana Ice Classic. Science writer Willis Eschenbach is in Alaska attending the Nenana Ice Classic, where the tripod still

remains in place a good 10 days beyond the typical end of the Ice Classic. This year's delayed ice breakup is consistent with a 15-year trend of longer ice seasons on the Nenana River.
http://wattsupwiththat.com/2013/05/15/the-icy-nenana-river/#more-86327

E. PACIFIC ISLANDS ARE GROWING, NOT SINKING

Islands in Tuvalu and other Pacific regions that served as poster children for global warming and sea level rise are actually growing, scientists acknowledge. Scientists report 80 percent of South Pacific islands are either growing or remaining the same size. "Some of those islands have gotten dramatically larger, by 20 or 30 percent," according to Australian climate scientist Paul Kench
http://wattsupwiththat.com/2013/05/16/australias-abc-comes-round-to-what-we-said-on-wuwt-years-ago/

F. A SIMPLE EXPERIMENT TO SHOW HOW COOL OBJECTS CAN KEEP WARM OBJECTS WARMER STILL

A Simple Experiment to Show How Cool Objects Can Keep Warm Objects Warmer Still

May 16th, 2013

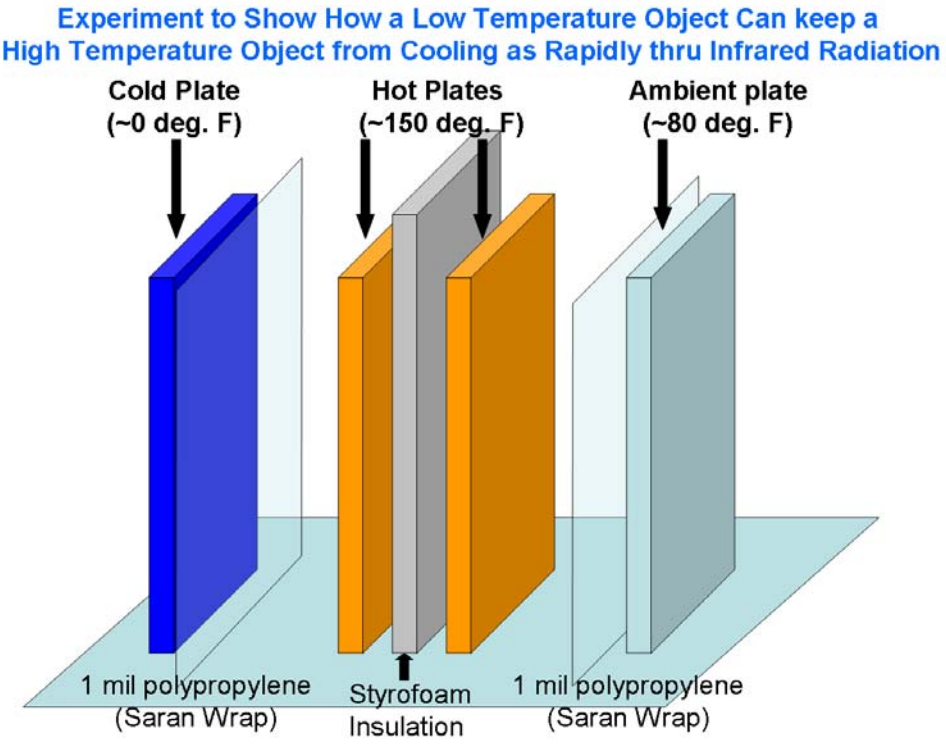
The standard explanation of the "greenhouse effect" is that it keeps the surface of the Earth warmer than it would otherwise be, through infrared radiation downwelling from the atmosphere. Even though this IR radiation is being emitted at a lower temperature than the surface, it actually keeps the surface warmer. Some people have trouble with this explanation, claiming it violates one or more laws of thermodynamics.

As I have discussed *ad nauseum*, the temperature of a heated object is always determined by rates of energy gain and energy loss, and that energy loss is almost always a function of the object's cooler surroundings.

Whether one views the greenhouse effect as extra infrared energy gained by the surface from the cooler atmosphere, or just a reduced rate of infrared energy loss by the surface to the atmosphere and outer space, the effect is the same: a surface temperature increase.

I've been toying with a few different ways to demonstrate this effect with a simple experimental setup using household items. Apparently the IR thermal imager, which I showed directly measures the surface temperature effects of varying levels of downwelling IR sky radiation on a microbolometer within the instrument, is not sufficient for some people.

So, I've come up with the following simple setup, and if I carry it out, I want predictions from readers here of what will happen to the temperatures of the 2 heated metal plates:



All metal plates coated with high emissivity (ε=0.99) Krylon flat white #1502

The two metal plates will be heated in the oven to the same temperature, then placed vertically next to each other, but separated by a sheet of Styrofoam. Obviously, the plates will cool, partly by conduction to the surrounding air. The above cartoon is just a rough approximation of the setup. I will probably have the ends of the heated plates covered by Styrofoam as well, to help reduce conductive heat loss.

But the plates also cool from infrared energy loss. So, I will expose one of the heated plates to a third plate that I will have chilled to at least 0 deg. F in the deep freeze.

Finally, I will expose the other heated plate to a 4th plate just at the ambient air temperature, say 80 deg. F.

Very thin sheets of polypropylene (Saran wrap), which are nearly transparent to IR radiation, will be used to minimize the movement of air currents between the heated plates and their cooler counterparts. All 4 plates will be coated with high emissivity (0.99) Krylon flat white #1502 paint.

My question is this: **Will the two hot plates cool at different rates?** I predict the heated plate exposed to the ambient (80 deg. F) plate will consistently stay warmer than the other heated plate exposed to the chilled (0 deg. F) plate.

Of course, if one waits long enough, all plates will come to the same temperature, since the hot plates are not actively heated (like the climate system is by the Sun) and the cold plate is not actively chilled (which would partly mimic the infrared energy sink of deep space).

The main point is that cooler objects which surround heated objects affect the heated objects temperature. As far as I can tell, this is a universal truth, with examples all around you. I find it mind boggling that some people do not accept it. (For anyone tempted to say, “But a cooler star doesn’t make a hotter star hotter still”, stay tuned for an experiment Anthony Watts has been working on).

I will monitor the plates' temperatures with my FLIR i7 thermal imager. Because there is still a small amount of reflection from the heated plates (0.01) the thermal imager must be pointed at an angle which will not pick up reflection from the cooler plates, which would bias the results. Another option would be to buy 2 inexpensive car thermometers with a remote display.
Again, I want to hear some predictions: **Will the hot plates cool at different rates?** If so, do you see a mechanism other than infrared energy transfer which will explain the different rates of cooling?
If you see pitfalls in the experimental setup, then feel free to point them out and suggest how to mitigate them.
UPDATE: I will be periodically checking in and deleting comments which do not directly address the above experiment and what results it will produce…unfortunately, the comments are already getting sidetracked.
Roy Spencer

G. Surface Radiation Budget: Where's the Proof?

May 13th, 2013

I've had several requests for evidence of the hundreds of watts of downwelling infrared sky radiation. I've mentioned that there are many surface radiation budget observation sites around the world (but few in oceanic areas for obvious reasons). I found this presentation (http://www.gewex.org/BSRN/BSRN-12_presentations/Wild_FriM.pdf) summarizing comparisons that Martin Wild and co-investigators have made between these measurements and the latest CMIP5 climate models at the observation sites. It is quite informative, and includes their version of the Kiehl-Trenberth energy budget diagram to fit better to the surface radiative energy budget observations
http://www.drroyspencer.com/

H. AN ANALYSIS OF NIGHT TIME COOLING BASED ON NCDC STATION RECORD DATA

Posted on May 17, 2013 by geoarmstrong
Guest post by Mike Crow
http://wattsupwiththat.com/2013/05/17/an-analysis-of-night-time-cooling-based-on-ncdc-station-record-data/

I. NEW PAPER SHOWS TRANSIENT CLIMATE RESPONSE LESS THAN 2°C

Posted on May 19, 2013 by Guest Blogger

New energy-budget-derived estimates of climate sensitivity and transient response in Nature Geoscience
Guest post by Nic Lewis
Readers may recall that last December I published an informal climate sensitivity study at WUWT, here. The study adopted a heat-balance (energy budget) approach and used recent data, including satellite-observation-derived aerosol forcing estimates. I would like now to draw attention to a new peer-reviewed climate sensitivity study published as a Letter in *Nature*

Geoscience, "Energy budget constraints on climate response", here. This study uses the same approach as mine, based on changes in global mean temperature, forcing and heat uptake over 100+ year periods, with aerosol forcing adjusted to reflect satellite observations. Headline best estimates of 2.0°C for equilibrium climate sensitivity (ECS) and 1.3°C for the – arguably more policy-relevant – transient climate response (TCR) are obtained, based on changes to the decade 2000–09, which provide the best constrained, and probably most reliable, estimates.
http://wattsupwiththat.com/2013/05/19/new-paper-shows-transient-climate-response-less-than-2c/

J. WEBINARS

Mark Your Calendars!
Announcing Emerging Technologies Impact Forums: Webinar Series

Renewable Energy Webinars (http://thehill.com/blogs/e2-wire/e2-wire/292005-shells-us-chief-makes-case-for-oil-exports)
Energy-Water Nexus Webinars (http://thehill.com/blogs/e2-wire/e2-wire/292005-shells-us-chief-makes-case-for-oil-exports)
NanoEngineering Webinars (http://thehill.com/blogs/e2-wire/e2-wire/292005-shells-us-chief-makes-case-for-oil-exports)

Join us for these COMPLIMENTARY webinars. Bringing you leading experts in the field to share their knowledge and expertise with you — all at your desktop.

ALL webinars are 10 a.m. Pacific/1 p.m. Eastern for approximately 1 hour.

REGISTER NOW FOR:
June 4, 2013: Thermal Transport
Presenter: Professor Vikas Prakash, Case Western Reserve University

Arnie Feldman

K. RENEWABLE FUEL STANDARD ASSESSMENT WHITE PAPER

Blend Wall/ Fuel Compatibility Issues

The Committee on Energy and Commerce is issuing a series of white papers as the first step in reviewing the renewable fuel standard (RFS). The RFS was created by the Energy Policy Act of 2005 and greatly expanded under the Energy Independence and Security Act of 2007. It sets targets and timetables for four categories of biofuels to be added into the nation's transportation fuel supply. Each category must meet specific requirements as to its feedstock and its lifecycle greenhouse gas emissions. The four categories are: conventional biofuel (cornderived ethanol), biodiesel, cellulosic biofuel, and undifferentiated advanced biofuel. The targets
for the four categories total 16.55 billion gallons for 2013, of which not more than 13.8 billion gallons is conventional biofuel. Conventional biofuel is scheduled to reach its cap of 15 billion gallons by 2015, while the other categories continue to rise until the total RFS reaches 36 billion gallons by 2022

http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/20130320RFSWhitePaper1.pdf

L. E&C COMMITTEE VOTES ON ELECTRIC RELIABILITY BILL

The House Energy and Commerce Committee recently held opening statements for a mark-up on H. 271, the *Resolving Environmental and Grid Reliability Conflicts Act of 2013*. H.R. 271, authored by Rep. Pete Olson (R-TX), would ensure America's power companies are able to comply with Department of Energy (DOE) emergency orders to maintain grid reliability without facing penalties for violating potentially conflicting environmental laws. The legislation was introduced in January with the co-sponsorship of Representatives Mike Doyle (D-PA), Lee Terry (R-NE), Gene Green (D-TX), Adam Kinzinger (R-IL), Ann Wagner (R-MO) and Tim Walberg (R-MI).

In his opening remarks, Committee Chair Fred Upton (R-MI) noted, "We will consider H.R. 271, a bipartisan bill championed by Representatives Pete Olson, Mike Doyle, and many others on this committee who have seen firsthand the challenges that occur when our power companies face conflicting obligations from DOE and the EPA… Identical legislation passed this committee and the full House last year, and I am hopeful we'll be able to get this through the Senate and to the President this time."

The committee voted on H.R. 271 on May 15th, approving it by voice vote.

A press release issued by the Committee following the vote may be read at http://energycommerce.house.gov/press-release/committee-approves-bipartisan-legislation-protect-electric-reliability

To read H.R. 271, go to http://docs.house.gov/meetings/IF/IF00/20130514/100856/BILLS-113HR271ih-HR271.pdf

M. THE EED SURVEY RESULTS ARE IN

In total about 270 ASME members responded. Some of the respondents recommended “George” should go to Hell! An equal number of respondents said they enjoyed the Newsletter. So this appears to be a wash. However, a large number of respondents requested more varied environmental discussions in the Newsletter. I am very agreeable to this suggest, but the flesh is weak. I am not knowable in all environmental fields, so I am soliciting your help in the form of written papers, which could to be copied into the Newsletter each week to provide a broader environmental objective. At the encouragement of Andy Miller I have started a discussion of Soil Remediation for non-hazardous Brownfields, pits and disturbed sites. But, soil remediation is chemically oriented and not of interest to all ASME members and thus we need papers on other subjects. Accordingly, I solicit papers from the Newsletter readership. The papers need not be “polished presentations”, but should present useable information regarding Regulations, facility designs, equipment design, equipment performance, analytical methods, etc. All papers will be published without editing and with or without the author’s name, as the author desires. The submission of old paper is encouraged, since the Newsletter is distrusted to Student ASME Members. Without checking with ASME Headquarters, I believe previously presented ASME accepted papers could be included in the newsletter.

Regards
George