

Should Desalination be a part of Los Angeles' Water Supply for the Future?

[Guest Commentary, Los Angeles Daily News, June 16, 2015]



By Gerald A. Gewe



Thomas J. McCarthy, retired LADWP Power System Director of Transmission, Distribution, Construction, and Maintenance, monitors, for The Associates, news articles, pertaining to energy issues that may affect the citizens of the state of California.

U.S. EPA FINDS FRACKING POSES NO 'WIDESPREAD RISK' TO DRINKING WATER



A WPX Energy natural gas drilling rig north of Parachute, Colorado,

December 9, 2014. Reuters/Jim Ur

By Valerie Volcovici and Timothy Gardner

WASHINGTON (Reuters) - Fracking has not led to widespread pollution of drinking water, the U.S. Environmental Protection Agency said on Thursday in a long-awaited draft study, but warned that certain drilling activities could pose risks.



The study, requested by Congress and five years in the making, found specific instances where water sources were affected by hydraulic fracturing, the injection of large amounts of sand, water and chemicals deep underground to crack open rock formations holding natural gas and oil.

The EPA also found risks to drinking water in formations where fracking occurred and where water supplies were scarce.

But overall, the EPA saw little impact to water supplies from the thousands of fracking wells across the country. (continued on page 3)

The current drought has again raised interest on the part of the public and water agencies in developing seawater desalination as a resource. We know that desalination represents a significant source in the water supplies of the middle east. The construction of seawater desalination facilities also played a major role in Australia's response to a decade-long drought in the 1990s, albeit at a substantially increased cost for water. Currently there are at least a dozen projects in California that are under consideration. The largest seawater desalination project in the western hemisphere is scheduled to become operational by the end of the year in San Diego, and the Orange County Water District is actively pursuing a similar project. The city of Santa Barbara is also almost completely rebuilding its 25 year old facility (built during the last major drought, but never put into full operation). What role can and should desalination play in the

water supply for Los Angeles?

In early 2000, Los Angeles Mayor James K. Hahn, after a trip to Israel, encouraged the L.A. Department of Water and Power (LADWP) to investigate the role that seawater desalination should play in Los Angeles' water supply. In response, the LADWP developed a conceptual plan for a modest sized project to be co-located with its Scattergood Power Generating Station near the Los Angeles International Airport. This plan would have allowed the LADWP to gain firsthand knowledge and experience in the technology with a minor impact on rates. The Scattergood Generating Station had an existing seawater intake for plant cooling that was to be used as the desalination source and existing available space that would have allowed for new plant construction without purchasing any additional land. (continued on page 4)

Water and Power Associates, Inc.

is a non profit, independent, private organization incorporated in 1971 to inform and educate its members, public officials and the general public on critical water and energy issues affecting the citizens of Los Angeles, of Southern California and of the State of California.



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LADWP
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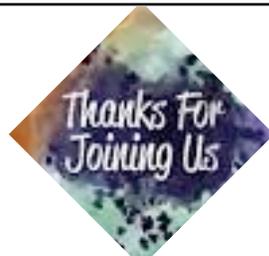
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El Pueblo de Los Angeles Historical Monument



An important part of the mission of the Water and Power Associates (Associates) is to provide information on the role that LADWP has played in the development of the City of Los Angeles and Southern California. Included in this is seeing that the Historic Record is preserved and that it is made more accessible to the public and scholars.

While there have been a number of excellent exhibits presented over the years, the Associates have been encouraging the development of a permanent exhibit where the LADWP's story can be presented and the public encouraged to delve more deeply into the history.

Recently the El Pueblo de Los Angeles Historical Monument and LADWP have been investigating the expansion of the Museum's existing Water exhibit (which is largely inaccessible due to ADA access issues). This will allow for a larger exhibit space, in which a more complete story of LADWP's role in the establishment of Los Angeles can be presented within the context of the Monument's mission of presenting the history of Los Angeles from its founding through 1931. The Zanja Madre runs underneath the exhibit space and would be visible to the visitors. There would also be space for rotating exhibits where more modern history and current water and energy issues facing Los Angeles and Southern California could be addressed.

The Associates is also encouraging space to be set aside so that visitors can have computer access to the Associates Virtual Museum and LADWP's collection of historic documents as they become available in through the LADWP website in the **next few years**.

As the plans are further developed the Associates will also be looking at the opportunity to assist the effort through arranging for its members to volunteer as docents for the exhibit.

We look forward to seeing this valuable addition to the Museum and assisting in moving the project forward. *GA*

Gerald A. Gewe,
Chair Historic Record Committee



**U.S. EPA FINDS FRACKING POSES NO
'WIDESPREAD RISK' TO DRINKING WATER**

WASHINGTON (Reuters) - Fracking has not led to widespread pollution of drinking water, the U.S. Environmental Protection Agency said on Thursday [June 4] in a long-awaited draft study, but warned that certain drilling activities could pose risks.

The study, requested by Congress and five years in the making, found specific instances where water sources were affected by hydraulic fracturing, the injection of large amounts of sand, water and chemicals deep underground to crack open rock formations holding natural gas and oil.

The EPA also found risks to drinking water in formations where fracking occurred and where water supplies were scarce.

But overall, the EPA saw little impact to water supplies from the thousands of fracking wells across the country.

The draft study will give state regulators, local communities and companies "a critical resource to identify how best to protect public health and their drinking water resources," said EPA science adviser Thomas Burke.

Other vulnerabilities to water supplies from fracking-related activities can result from inadequately cased or cemented wells that leak gases and liquids underground when inadequately treated wastewater is discharged into the resource, the study said.

The study contained a compilation of more than 900 references and citations, as well as agency-conducted research that has undergone "extensive peer review," Burke told reporters.

Environmental groups cast doubt on the EPA's findings.

"There are still significant gaps in the scientific understanding of fracking," said Amy Mall, senior policy analyst at the Natural Resources Defense Council. "This study is site-specific and limited, as

EPA has explained, which makes it impossible to fully understand all the risks at this time."

Mall said, however, that unlike in the past updates on the study, the EPA this time acknowledged there are some effects on water.

Mark Brownstein, vice president of the Environmental Defense Fund, said the process of fracking itself is just one risk factor.

"Ongoing physical integrity of the wells and handling the millions of gallons of wastewater coming back to the surface after fracking, over the lifetime of each well, are even bigger challenges," he said. "Relentless focus on these issues by regulators and industry is critical."

The EPA's Burke told reporters that oil and gas companies were a major source of information on locations and practices, and that the agency had a "very cooperative relationship with industry."

Energy groups embraced the EPA's findings, saying they backed up other studies by the Energy Department and U.S. Geological Survey.

"The report contradicts the most prevalent claim from anti-fracking activists, which have made 'water contamination' the very foundation of their campaign against hydraulic fracturing," said Katie Brown, spokeswoman for the Independent Petroleum Association of America's Energy In Depth arm.

The American Petroleum Institute said the study affirmed the sector's record of "continuous safety improvements."

The draft study will undergo external review by the public and the agency's Science Advisory Board and is due to complete the process by next year.

(Reporting by Valerie Volcovici and Timothy Gardner; Editing by Lisa Von Ahn

Submitted By Thomas J. McCarthy
Technical Consultant

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Should Desalination be a part of Los Angeles' Water Supply for the Future?

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The proposed capacity of 10 MGD (million gallons per day) would have served the area in the vicinity of the plant with minimal requirements for pumping and distribution. The

disposal of brine that results from the desalination process would have been handled by the existing city of Los Angeles Hyperion Wastewater Treatment Plant outlet; this method of brine disposal was considered at the time as environmentally beneficial as it would have raised the salinity level of Hyperion's discharge effluent closer to that of the ocean.

While this desalinated water would have been more expensive than purchases from the Metropolitan Water District at that time, the overall cost impact would have been negligible, as the quantity delivered would have been less than two percent of LA's overall water supply. In actuality, projected costs would have been within the range of the some of the more expensive water recycling projects under consideration at the time. However, interest in the proposed desalination project eventually waned in favor of continued focus on water conservation, wastewater recycling and stormwater capture.

In light of the current drought and ongoing long-term water supply issues, Los Angeles should carefully study and critically evaluate the desirability of adding some measure of desalinated water to the city's water supply portfolio. This is not to suggest immediately beginning construction, since it is likely (although not certain) that the current crisis will be over long before a facility could be built. Much information should become available from the first few years of operation of the San Diego project, although information sharing may be severely limited due to the private ownership of the facility and the owner's desire to protect competitive advantage. The Santa Barbara facility will be another, likely more open, source of information. Los Angeles should do all it can to encourage information sharing through the regulatory and permitting processes for the benefit of the entire state.

It is unlikely that desalination of seawater will be a "magic bullet" to solve all of California's water issues



due to the limited number of feasible sites and the immense cost that would be involved in facility construction and moving the water from sea level elevation where it would originate to inland areas where water demand is highest. However, there is substantial water use in coastal Southern California and desalinated water could provide a significant benefit to local water supply reliability (as a drought-proof source) and to the economies of Los Angeles and the Southern California region.

Conservation, as the cheapest and most immediate source of water, has been mandated by Governor Brown to reduce California's urban water use in response to the current drought. However, conservation alone cannot be counted on to fully offset the effects of future droughts as well as increasing demands due to population growth and continuing water allocations for the environment. Therefore, serious consideration should be given to expanding Los Angeles' current water supply portfolio (traditional sources, recycled water, stormwater capture) to include desalination, a proven source of water in the middle east and Australia, to reliably meet LA's water needs of the future.

Jerry Gewe is a retired Assistant General Manager, LADWP Water System

Carlsbad, San Diego - Santa Barbara - Huntington Beach - and another 15 to 17 seawater desalting plants are in the design or planning phase around the state. per Google

LADWP has initiated efforts to catalogue and protect the many artifacts that are scattered throughout the Department's facilities. **Volunteers are needed to help develop information on what many of these items are, how, when and where they were used, and the items' significance.**

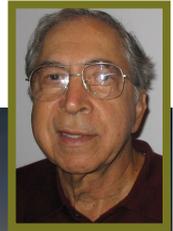
If you are willing to participate in this effort, please contact Jerry Gewe at Jgewe@hotmail.com and indicate your interest
Any artifacts or documents you possess and would like to share in our virtual museum, contact us at comments@waterandpower.org

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In Memoriam



Robert Agopian

It is with deep sorrow we announce the death of our **Board member, Bob Agopian, Retired, Los Angeles Department of Water and Power Manager of Electrical Distribution Design..**

Backers of desalination hope Carlsbad plant will disarm critics



A pipe fitter installs a pressure relief valve on a pipe that will carry desalinated water from the Poseidon Water plant in Carlsbad.



Submitted by Thomas Gackstetter

DON BARTLETTI / LOS ANGELES TIMES

June 4, 2015, 4:00 a.m.

For one group of international conventioners coming to San Diego this summer, the highlight probably won't be the panel discussions or technical exhibits or even the visits to the zoo, SeaWorld or Petco Park.

For the expected 1,500-plus people attending the International Desalination Assn. World Congress, the highlight will be a Sept. 4 tour of the \$1-billion desalination plant under construction in Carlsbad.

The plant is touted as the largest desalination project in the Western Hemisphere. The technology being installed, though not altogether new, has been upgraded by experts from an Israeli company. The Israelis will help run the plant and are looking to hire former U.S. Marines to work there.

Thousands of desalination and water recycling plants have been built around the world, with some of the biggest in the Middle East, North Africa and the Caribbean. The Carlsbad plant, set to begin operation by Thanksgiving, is making its debut just as drought has become a crisis across California and the West.

For Poseidon Water, the Boston company building the plant — and for the international desalination industry — it presents an opportunity to try to disprove the criticism that dogs such projects: that they are exorbitantly expensive, hog energy and damage the environment.

"Carlsbad is going to change the way we see water in California for decades," said Peter MacLaggan, a Poseidon Water vice president. "It's not a silver bullet to solve all our water problems, but it's going to be another tool in the toolbox."

Though it might be lost on some of this summer's convention-goers, San Diego has a long history with desalination.

The region took it as a clarion call when, in 1961, President Kennedy declared: "If we could ever, competitively, at a cheap rate, get fresh water from saltwater that would be in the long-range interests of humanity [and] really dwarf any other scientific accomplishments." *ew*



FUKUSHIMA: *The Story of a Nuclear Disaster*

by David Lochbaum, Edwin Lyman, Susan Q. Stranahan, and the Union of Concerned Scientists. New York: The New Press, 2014. 310 pp. Illustrations, Notes and References, Index. Hardbound, \$27.95. www.thenewpress.com.



On March 11, 2011, the worst earthquake in Japan's history struck northern Honshu, Japan's largest island. It was followed by a massive tsunami that swept onto the island, killing tens of thousands of people and destroying entire towns. The earthquake and tsunami also severely damaged the nuclear reactors at Fukushima Daichi, the nuclear complex owned by the Tokyo Electric Power Company (TEPCO). Technicians at the plant were overwhelmed by the complexity of the disaster. Fail-safe devices broke down, the plant lost electrical power, and with it conditions at the plant quickly worsened. Both TEPCO and the Japanese government attempted to assure the nation that the reactors were under control and there was no danger of radioactive leakage. But nothing was under control; radioactivity spread as far as a hundred miles away. TEPCO officials were completely unprepared for a disaster of this magnitude.



The authors, with input from the Union of Concerned Scientists, trace the events of March 11, and the weeks and months that followed, in meticulous detail. Their main concern in this book is to expose the shortcomings of nuclear power companies that for decades have assured the public that their facilities were safe and that the chances of nuclear meltdown were so remote that it could never happen. But it did happen. And when it did, the so-called experts continued to resist the demands of anti-nuclear activists to institute major changes in policy and to implement major reforms in making nuclear power production safer than the platitudes repeatedly given that somehow Fukushima was exceptional.



The story told here does not just deal with Fukushima Daichi. The authors include a chapter on the response of the United States's Nuclear Regulatory Commission (NRC), a federal regulation agency that supposedly created the rules nuclear power companies were supposed to follow. In fact, the authors demonstrate that for many years the NRC provided little more than a rubber stamp for nuclear power companies that insisted their facilities were safe. Underlying their insistence was a reliance on probability risk assessment that was dominated by a view

to the bottom line. The private companies simply did not want to expend large sums of money for a level of protection against an accident or terrorist attack that seemed so remote, it wasn't worth the expense.



The authors offer an interesting analogy on the difference between setting limits and insisting that something is safe enough. Roads have speed limits. If road signs, instead of saying "Speed Limit 55" or "Maximum Speed 20" were to say "Don't Go Too Fast" or "Drive at a Reasonable Pace," how would people interpret such signs? How fast can someone go without considering the speed as "too fast?" Or what is "a reasonable pace?" A speeding car that piles into a tree probably was being driven too fast—but a car going 120 miles an hour near a school zone without hitting any children could be considered going at a reasonable pace because there was no accident. "Safety requires specificity," insist the authors. "Lack of specificity invites a free-for-all" (p. 252).

Despite the anti-nuclear protests in Japan, the government has rejected a ban on nuclear power plants and, with some reforms and increased safety devices and training of personnel, continues to rely to some extent on nuclear plants to produce electricity, a decision that Japan, a country known as earthquake-prone, as an industrial nation lacks coal and oil resources. As for the United States, even with the episodes at Three Mile Island and Chernobyl, American power companies still exercise considerable political influence over the NRC. The authors make a compelling case for greater oversight and reforms. "What is needed is a new, commonsense approach to safety, one that realistically weighs risks and counterbalances them with proven, not theoretical, safety requirements," they state. "The NRC must protect against severe accidents, not merely pretend they cannot occur" (p. 258). *SW*

Abraham Hoffman
teaches history
at Los Angeles Valley College.



Mystery HISTORY



By Jack Feldman,
Webmaster



← View showing the steel framing of Los Angeles City Hall during its construction.

Background

A new City Hall was needed to replace the old 1888-built City Hall building located on Broadway between 2nd and 3rd Streets. After authorizing a bond issue, the city commissioned John Parkinson, Albert C. Martin*, and John C. Austin as architects for the new Los Angeles City Hall. Parkinson was responsible for the concept and architectural design of the building; Martin, the structural design; and Austin, the working drawings and general administration of the project.

* Also known for design of the John Ferraro Office Building among others.

View of Los Angeles City Hall decorated with banners for its opening ceremony. A crowd of people are gathered at the curb, bleachers are full of spectators, and a parade is in progress on Spring Street.. →



Background

For years, the Charter of the City of Los Angeles did not permit any portion of any building other than a purely decorative tower to be more than 150 feet. At 28 stories and 454 feet high, City Hall was the only exception making it the tallest building in Los Angeles for years to come.

Question #1 What year was City Hall built?

- a) 920 b) 1924 c) 1928 d) 1932

Question #2 Since it was incorporated in 1850, how many City Hall buildings has Los Angeles had?

- a) Two b) Three c) Four d) Five

Question #3 Until what year did City Hall continue to be the tallest building in Los Angeles?

- a) 1934 b) 1944 c) 1954 d) 1964

Find the answers at: http://waterandpower.org/museum/Mystery_History.html

POWER, WATER, FUEL, ENVIRONMENT

Submitted by Thomas J. McCarthy



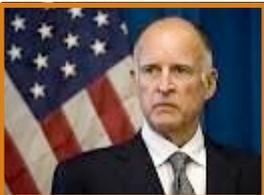
Obama Admin Finalizes WOTUS Rule



The Obama administration released a final rule Wednesday that would increase the number of streams and wetlands that receive automatic protection under the Clean Water Act. President Obama hailed the final "Waters of the United States" rule issued by the Environmental Protection Agency (EPA) and the Army Corps of Engineers as a major step to protect the health of waterways and the economy, Environment & Energy Publishing reports. "Too

many of our waters have been left vulnerable to pollution," he said in a statement. "This rule will provide the clarity and certainty businesses and industry need about which waters are protected by the Clean Water Act, and it will ensure polluters who knowingly threaten our waters can be held accountable."

Environment & Energy Publishing, May 27



California Gov. Brown Orders Major Cut in Greenhouse Gas Emissions



California Gov. Jerry Brown on Wednesday [April 22] ordered new standards for greenhouse gas emission reductions throughout the next 15 years in the state, building on the state's already-stringent requirements. Brown ordered a reduction in greenhouse gas emissions to 40 percent below 1990 levels by 2030. In a news release, Brown

said the targets align with the standards set by the European Union. "With this order, California sets a very high bar for itself and other states and nations, but it's one that must be reached "for this generation and generations to come," Brown said.

Wall Street Journal, April 29 Reuters



LA Mayor Envisions Greener, More Walkable City in the Future



Los Angeles, known for its cars, smog and sprawl, wants to reinvent itself as the home of electric vehicles, solar panels and bicycle paths. "Mayor Eric Garcetti on Wednesday unveiled an ambitious plan to make LA the most sustainable big city in the nation over the next two decades, a place

where people ride bikes, board buses and trains, and even walk to get around," the Associated Press reports.

Associated Press, April 8



McCarthy: Clean Power Plan Interim "Cliff" Could Limit Compliance Options



The Environmental Protection Agency (EPA) has heard from numerous stakeholders that the Clean Power Plan's interim compliance targets might force states to comply by upping their use of natural gas rather than investing in renewable energy and efficiency options that take more time to develop, agency chief Gina McCarthy said Friday morning. Speaking at a forum at the

University of Chicago, McCarthy said "the EPA is evaluating" potential changes to the early carbon reductions required under the current version of the plan, Environment & Energy Publishing reports.

Environment & Energy Publishing, April 10

We Still Need Reliable, Affordable Electricity to Power Prosperity



Looking ahead, our industry continues to transition to cleaner ways of generating electricity. The coal-fueled power plant fleet in the United States has evolved to be cleaner and more efficient because of breakthroughs in technology, and we need to support the continued development of technologies that will allow coal to remain part of our country's balanced fuel portfolio.

"At the same time, we are increasing the use of natural gas and renewable generation and reconfiguring the grid to support further integration of distributed generation and the growth of other customer-driven technologies in the coming years. This huge transformation in the way we generate, distribute and use electricity can't be done overnight. But if we adopt a reasonable approach and take the time to get it

right, we can usher in a new era of prosperity. one that will honor and build upon our nation's history as a leader in the production and supply of reliable, affordable electricity to power our economy," writes Nick Akins, president and chief executive officer of American Electric Power, in an opinion piece.

(Nick Akins)

The Energy Daily, May 28

EPA's rule on Colstrip coal plant pollution struck down

June 11, Associated Press – (Montana)

EPA's rule on Colstrip coal plant pollution struck down. Haze reduces visibility and is caused by tiny particles of nitrogen oxide and sulfur dioxide. The Clean Air Act requires companies to use the best available technology on older coal plants to reduce the pollutants, which can cause

health problems such as respiratory illness.

But a three-judge panel of the 9th U.S. Circuit Court of Appeals said the rule from the Environmental Protection Agency would arbitrarily require PPL Montana to install pollution controls costing tens of millions of dollars without assurance of improvements in visibility.

Tuesday's ruling applies to the 2,100-megawatt Colstrip plant and a second plant in Billings that recently shut down partly because of the projected cost of complying with separate mercury pollution rules.

Source: <http://www.spokesman.com/stories/2015/jun/11/epas-rule-on-colstrip-coalplant-pollution-struck/>

Ag lobby: Final EPA water rule is worse than proposal

The largest lobby group for farmers and ranchers declared Thursday that the Obama administration's new rule asserting power over small waterways is worse than what had been proposed.

The American Farm Bureau Federation, one of the most vocal opponents of the Environmental Protection Agency's (EPA) regulation, wrapped up a detailed two-week **review** of the **rule** and concluded that the agency did not properly respond to criticisms from farmers.

"Our public affairs specialists and legal team have assembled the best analysis available anywhere, and their conclusions are sobering: Despite months of comments and innumerable complaints, the waters of the U.S. proposal is even worse than before," Farm Bureau President Bob Stallman said in a statement. "Our analysis shows yet again how unwise, extreme and unlawful this rule is," Stallman said.

The Obama administration said it wrote the rule to ensure that small streams, ponds, wetlands and

other important waterways can be regulated under the Clean Water Act, which requires permits for actions the harm or pollute water.

It has long concerned the Farm Bureau, which fears that farmers would be subject to permitting requirements and restrictions for common agricultural practices on their land like filling ditches and spraying fertilizer.

The Farm Bureau said the EPA made its rule even more broad than what it put out for public comment in March 2014, echoing a criticism that congressional Republicans have made since the May 27 announcement of the final rule.

Specifically, the Farm Bureau said that the EPA's definition of a tributary was broadened, and it now requires only "physical indicators of a bed and banks and ordinary high water mark."

This means that ditches, wet land near streams, isolated water and other areas are subject to the rule, the Farm Bureau argued.

Obama administration officials sought to highlight with the rollout everything that is not regulated under the rule. They argued that opponents had no reason to fear the rule unless they intend to pollute.

"It does not interfere with private property rights or address land use," EPA Administrator Gina McCarthy said at the time. "It does not regulate any ditches unless they function as tributaries. It does not apply to groundwater or shallow subsurface water, copper tile drains or change policy on irrigation or water transfer."

The Farm Bureau did not say whether it would sue the EPA to have the rule overturned.

The House has voted to block the rule's implementation, and the Senate Environment and Public Works Committee **voted** Wednesday to block it and give instructions to rewrite it.

Thinkstock
By **Timothy Cama** - 06/11/15 05:11