

Oroville Dam's near catastrophe: A wake up call for the nation

By Patrick Ruckert



Oroville Dam and spillways

Aerial photo taken Sunday morning, February 12, shows water running over the emergency spillway, at the left, and down the hill into the diversion pool. The main spillway flows at center and the dam is at the far right.

February 26, 2017—Late Sunday afternoon on February 12, an emergency alarm was sounded by the Yuba County, California Sheriff:

“This is an evacuation order. Immediate evacuation from the low levels of Oroville and areas downstream is ordered. A hazardous situation is developing with the Oroville Dam auxiliary spillway. Operation of the auxiliary spillway has led to severe erosion that could lead to a failure of the structure. Failure of the auxiliary spillway structure will result in an uncontrolled release of flood waters from Lake Oroville. Immediate evacuation from the low levels of Oroville and areas downstream is ordered. This is NOT A Drill. This is NOT A Drill. This is NOT A Drill.”

Soon, 188,000 people were in their cars, jamming the roads and becoming more and more panic stricken as authorities over emergency broadcast networks were warning that the Oroville Dam emergency spillway could collapse within the hour. Had it done so, a 30-foot wall of water would have swept down the valley of the Feather River. The casualties would have been in the thousands.

We shall return to the story of Oroville Dam shortly. But, first, to be blunt, the dams, the bridges, the roads— the entire infrastructure system of the nation, is not only inadequate, but it is falling apart after decades of neglect. Fifty years of the “post-industrial society,” the turning of our once magnificent industrial, scientific, and infrastructure driven economy into a Wall Street nightmare of financial speculation has wrecked the what was the most productive economy in the world.

This is not the place to catalog the symptoms of this crime against humanity, but I want to use the near catastrophe of Oroville Dam to discuss the potential now represented by the Trump Presidency to, in his words, “make America great again.” Neither dams nor nations can be made great by words alone. Those who wish to do so must know what they are doing and take the necessary action.

We shall begin by noting what President Donald Trump said last week, speaking at the Conservative

PAC conference in Washington, D.C.:

“We’ve spent trillions of dollars overseas while allowing our own infrastructure to fall into total disrepair and decay. In the Middle East, we’ve spent as of four weeks ago \$6 trillion. Think of it. And, by the way, the Middle East is in what – I mean, it’s not even close – it’s in much worse shape than it was 15 years ago. If our Presidents would have gone to the beach for 15 years, we would be in much better shape than we are right now, that I can tell you. Yeah, a hell of a lot better. We could have rebuilt our country three times with that money.”

The President is right, and he has put forth as his policy the investment of \$1 trillion over ten years in building and rebuilding America’s infrastructure. What he has not made clear is how even that moderate plan is to be done— moderate because one trillion over ten years does not even come close to what is required.

In an interview with the editor of the San Francisco Review of Books, Joseph Ford Cotto, published February 15, 2017, Lyndon LaRouche said:

“Trump has promised to invest \$1 trillion in urgently needed infrastructure and promised the implementation of a 21st century Glass Steagall Act. If he implements his infrastructure promise, he will need that reform to finance it.... Really we’re talking about Trump on the basis that he is now the new leader for the United States. He has promised to build up the American economy again, and there are great precedents of American presidents using the American System of Economy as it was developed by Alexander Hamilton, explicitly in contrast to the British System of Free Trade. That is the system that worked in the past, and it will work again. Now, what Trump has done by his success, here, is to build up the possibility of a revival of the U.S. economy.”

U.S. Infrastructure Flunks the Test

Though the term infrastructure is used here, a word of context must be stated. Some years ago Lyndon LaRouche made the point that the term infrastructure is inadequate; it does not describe the real process of human progress. Rather, the term platforms of productivity should be used to represent how mankind’s economy must always be governed by a process of leaping upward in its productive power. It is by introducing new scientific principles, and applying those discoveries through new technologies, that our species is able to increase its potential relative population density, also a term created by LaRouche. New platforms of productivity transform the entire array of technologies of an economy, much like the introduction of railroads did in the 19th century, and the Apollo Project did in the 1960s.

The American Society of Civil Engineers regularly issues a “scorecard,” rating the various categories of our nation’s infrastructure. The “score card” for 2013 tells us that if the nation was a student we would be repeating the second grade. The price tag, as estimated by the Society, just to repair the existing infrastructure by 2020, is \$3.6 trillion. Thousands of dams and bridges need repair, many of which are in a dangerous condition. The five year California drought was alleviated by a dramatic increase of pumping groundwater from the aquifers, which has created a subsidence of the ground throughout especially the Central Valley. As the ground subsides damage to roadways, bridges and even the California Aqueduct, is now and will cost tens of millions to repair. For just California alone, the “report card” specifies \$65 billion per year is required to fix and maintain its water infrastructure. And that does not include the one billion in damage to the roads and bridges of the state caused by the past few weeks of flooding.

Case Study: U.S. Dams

The following excerpts from the “Report Card” of the American Society of Civil Engineers summarize the numbers, the conditions, and the cost immediately required to ensure the safety of U.S. dams:

Thousands of our nation's dams are in need of rehabilitation to meet current design and safety standards. They are not only aging, but are subject to stricter criteria as a result of increased downstream development and advancing scientific knowledge predicting flooding, earthquakes, and dam failures.

The average age of the 84,000 dams in the country is 52 years old. The nation's dams are aging and the number of high-hazard dams is on the rise. Many of these dams were built as low-hazard dams protecting undeveloped agricultural land. However, with an increasing population and greater development below dams, the overall number of high-hazard dams continues to increase, to nearly 14,000 in 2012. The number of deficient dams is estimated at more than 4,000, which includes 2,000 deficient high-hazard dams. The Association of State Dam Safety Officials estimates that it will require an investment of \$21 billion to repair these aging, yet critical, high-hazard dams.

The complexity of monitoring the conditions of our nation's dams is partly because they are owned and operated by many different entities. While some of the nation's dams are owned and operated by federal, state, and local governments, the majority, 69%, are owned by a private entity. The federal government owns 3,225 dams, or approximately 4% of the nation's dams. It may be surprising to some that the U.S. Army Corps of Engineers owns only 694 dams.

Other than 2,600 dams regulated by the Federal Energy Regulatory Commission, the remaining dams in the nation are not regulated by the federal government, but instead rely on state dam safety programs for inspection. State dam safety programs have primary responsibility and permitting, inspection, and enforcement authority for 80% of the nation's dams.

Funding needs are significant, and vary according to who owns and operates the dam. The Association of State Dam Safety Officials estimates that the total cost to rehabilitate the nation's non-federal and federal dams is over \$57 billion. To rehabilitate just those dams categorized as most critical, or high-hazard, would cost the nation \$21 billion, a cost that continues to rise as maintenance, repair, and rehabilitation are delayed. Overall, state dam safety program staffing has increased over the past several years. However, in 2011 state programs spent over \$44 million on their regulatory programs, a decrease from recent years.

The U.S. Army Corps of Engineers estimates that more than \$25 billion will be required to address dam deficiencies for Corps-owned dams.

The Oroville Dam

Oroville Dam is just one of thousands of dams in the nation that forty years of neglect have made dangerous to millions of people. Oroville Dam must be the wake-up call to the nation that a serious infrastructure building and repair policy must be initiated now.

Oroville Dam is not only the tallest dam in the United States at 770 feet, but it is the lynch-pin reservoir of the California State Water Project, which, with the Central Valley Project initiated by FDR, created the most extensive and complex water management system in the world. The dam is about 80 miles northeast of Sacramento and sits on the Feather River, which flows into the Sacramento River, and is the heart of the system that provides the water for 23 million people and millions of acres of farmland, including southern California 400 miles to the south.

It is an earthen dam with a concrete core and was completed in 1968. For fifty years the emergency spillway had never been used until, suddenly in early February, the regular spillway began to disintegrate. The emergency spillway was never armored with concrete and thus remained nothing but a hill of dirt sitting under the berm of concrete to the west of the dam itself. Warnings were made twelve years ago that should the emergency spillway be required to be used the dirt below the berm would rapidly wash away and the foundation of the berm would collapse. These warnings were

dismissed by both state and federal regulators as an improbable danger. In truth, armoring the spillway would have cost some millions in 1968, and probably ten times that in 2005, which neither the Bush nor the Schwarznegger administrations, nor the water contractors who would have to cover some of the cost, wanted to bear.

When the main spillway began to disintegrate on February 7, the decision to close the gates to the spillway was made and the gates closed on Feb. 10. Stopping the flow down the spillway, with more than 100,000 cubic feet per second of water flowing into the reservoir from the storm run-off and melting snow, resulted in the reservoir level rising as much as 10 feet per day. On Feb. 11, the rising reservoir overflowed into the emergency spillway, while at the same time water was once again allowed to flow down the main spillway, with the managers accepting the consequence that more damage would be done to it.



Water flows over the emergency spillway, eroding the supporting soil.

The emergency spillway, the designers and engineers claimed, would be able to handle a flow of 250,000 cubic feet of water per minute (cfm). On Sunday afternoon, Feb. 12, with a flow of just over 12,000 cfm, it became clear that the water was eroding the hillside, threatening a collapse of the berm that would send a wall of water 30 feet high down the river and into the communities below. That is when the emergency evacuation order was issued. The regular spillway's gates were immediately reopened and within a day the water level in the reservoir had fallen below the lip of the berm, stopping the flow of water down the emergency spillway. Two days later people were given the all clear signal to return to their homes.

In the two weeks since, the regular spillway has remained opened, and the reservoir level is now 50 feet below the top of the dam. Further damage to the regular spillway is assumed to be occurring, but for now access to it is impossible due to the high volume flow of water. The early estimate of the cost to repair the spillway, which won't be possible to do until the Winter and Spring run-off subsides, is \$200 million.

China Offers to Help Make America Great Again

In January of this year, Ding Xuedong, the chairman of the the China Investment Corporation (CIC),

offered to change the CIC's holdings of U.S. Treasury debt, into an investment for the building of new infrastructure in the United States. Ding's estimate of the investment needed to build a new and modern economic infrastructure in America was a very large \$8 trillion. CIC now holds \$50 billion in U.S. Treasuries, a part of \$1.14 trillion in Treasuries held by Chinese institutions. The insane quantitative easing policy of the Federal Reserve has made the returns on those Treasury bills virtually zero. The Chinese would like a better return on their holdings and see investing in building U.S. infrastructure as a way to do so. In addition, of course, that opens the door to more U.S.-Chinese cooperation. A reflection of the Win-Win policy of President Xi's "One Belt-One Road" policy, or as it is often referred to— "The New Silk Road." In addition to these Chinese proposals, it must also be mentioned that Japanese Prime Minister Abe, in his discussions with President Trump earlier this month, also offered to invest a one to two trillion dollars in U.S. infrastructure.



Part of China's fleet of high-speed trains. China with 11,000 miles of high-speed rail now, plans to make that 20,000 miles by 2020.

The vehicle for investment in U.S. infrastructure that the CIC is seeking, in fact, does not yet exist; it would be a "Hamiltonian" national credit institution for infrastructure and manufacturing investments, as specified in EIR Founding Editor Lyndon LaRouche's "Four Laws to save the United States economy" in 2014.

These Four Laws start with reimposing Franklin Roosevelt's Glass-Steagall legislation, together with a return to Hamiltonian National Banking as a means of extending credit into the real economy, spearheaded by science-drivers in fusion energy development and a restoration of NASA and the exploration of space.

In 2014, Lyndon LaRouche's political action committee, LaRouche PAC, published a detailed report on exactly what must be the U.S. policy. That report, "The United States Joins the New Silk Road: A Hamiltonian Vision for an Economic Renaissance," soon to be updated, provides the blueprint President Trump must adopt. The plan includes a nation-wide high-speed and maglev rail network, connecting North America to Asia by the Bering Strait Tunnel, the building of new Renaissance cities with a mission to drive forward the frontiers of science, the rapid development of fusion energy, an expanded space program, and great water projects to manage the global water cycle.

Last week the President met with about 30 leaders of American industrial corporations, and he was informed by them of the problems their companies are having in getting financing to expand

production and to increase their exports, specifying, for example, the virtual cut-off of guarantees from the U.S. Export-Import Bank.

For American corporations the export market means life or death. For example, General Motors delivered a record 3,870,587 vehicles to China in 2016, and China remained GM's largest market in terms of retail sales for the fifth consecutive year, accounting for more than one-third of the company's global sales. Similarly, Caterpillar, Inc, the world's largest producer of heavy machinery, in 2016 saw its sales fall, except to China, where expanded sales to that country is driven by its massive infrastructure building as part of the One Belt-One Road policy.