

Perseverance

By: Kenneth H. Nelson, P.E.

Since a significant portion of our practice is involved in the extraction, processing, and transport of oil and natural gas, it is worth looking back to previous downturns in that industry to put the recent turmoil in the oil business into perspective. It has been said that when things are going well, everyone wants to be around young people, but when things are looking bad, people seek elders for reassurance that there is a way to get through whatever threatens. We as a company are some of the “older people” in the industrial landscape, so in this article we will try to share our observations of what has gone before and give our readers some hope for the future.

Longevity runs in my family, so I have been blessed to be surrounded by elders all my life, and their historical perspective has always been interesting and a comfort to me in turbulent times. It has been useful to have such eyewitnesses of history around when the attention span of society has been shortened to less than a day by the news cycle of electronic media. I remember when I was in high school my history teacher was talking about the so-called “robber barons” of the early industrial age around 1900. Being from a family of engineers, I found it odd that these titans of indus-



Image credit: Victor Habbick - Freedigitalphotos.net

trial progress were being vilified. So I asked my grandmother, who was born in 1884 and was herself a civil engineering graduate of Texas A&M, what people thought of them at the time. She replied “We thought they were brilliant, and we respected all they had achieved!” She was born at a time when horse transport was still common and a steam locomotive was a

marvel to behold, so she viewed the modern world these industrialists were creating as a great thing. She also observed the tremendous philanthropy many of these so-called “robber barons” delivered during their industrial careers. This early episode taught me that present day views cannot be appreciated without the perspective of the past.

The oil industry was really getting started in earnest about the time my grandmother was born. The broad swings in price that occurred in the early days of oil production caused havoc in the market, and the price swings were similar in percentage to those seen in recent years. Long running efforts have been made by producers, governments, and cartels to stabilize prices. But in the shorter run, speculators and sovereign players have caused massive spikes and plunges in the price of oil for either financial or political ends. The

impacts of these price swings are immediate, and energy companies have numerous times had to make radical course changes to survive. The people in the industry are a creative and energetic bunch and have managed to keep the ball rolling through it all. For a terrific read on the entire history of the oil industry, see [The Prize](#) by Daniel Yergin.



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Chemical Tank Dock

The trade in oil was one of the prime drivers of events in the last century, and despite the recent tax-advantaged growth of alternative forms of energy, the thermodynamic facts make it likely that oil and gas will continue to be a major component of the planetary energy budget. Liquid and gaseous petroleum products are a marvelous phenomenon of nature. They are remarkably energy dense, plentiful, transportable, storable, and infinitely safer on a human time scale than nuclear energy. (There have been notably tragic oil spills in history, but just ask the former residents near the Chernobyl or Fukushima nuclear plants their preference for a neighbor. They will tell you that nuclear energy accidents involve a geologic time scale to fix, which even the long-lived among us do not have the ability to survive.) Since oil is by its nature a greatly adaptable energy source, on a level playing field it would always have a leading place in the world economy. Regulations, tax policies, and political machinations cause dislocations in the game; but ultimately physics and thermodynamics will have their say, and the inherent qualities of oil will continue to make it a significant player.

It will take some time for the supply and demand curves for oil to balance with the political currents of

today. Until that happens, we will use our broad experience to service whatever needs our clients have. I remember thinking in the bleak days of the mid 1980's oil crash that eventually someone was going to have to build something again, and if we could hang in long enough to show up with the right skill set, we would be needed and our business would recover. Eventually the oil patch did come roaring back, and we were able to capitalize on it for a good stretch from the 1990's to the present. But we have always done work in industries other than oil, and there is always something to be done that requires people with a methodical approach to solving problems, good math skills, familiarity with industry standards, and a willingness to pitch in and get a job done. So we pursued other industry sectors, public sector infrastructure, electrical utilities, marine facilities, environmental clean-up projects and permitting, specialty architectural assignments, construction management, project management, and procurement. Through those efforts, we not only survived the worst oil price downturn in the company's history to that time, we diversified our talent in ways that have made the company

more able to persevere in today's challenging environment.

It is said that those who do not learn from history are doomed to repeat it. Nelson has learned from history. Not just from the 1980's oil crash, but from the 70 years our company has been in practice and the more than 100 years that the Nelson family has been practicing engineering in many disciplines all over the world. Our founder Waldemar Nelson was born in 1916 in the midst of World War I. He grew up during the economic boom of the Roaring Twenties, followed by the stock market crash of 1929, the Great Depression of the 1930's, World War II in the 1940's, the post-war boom in the 1950's, the political turmoil of the 1960's, the inflation of the 1970's, the corporate raiding and oil crash of the 1980's, the numerous economic cycles of the 1990's and 2000's, and ultimately hurricane Katrina devastating his city in 2005 just prior to his passing. This life experience gave him a remarkable calmness when facing crisis. At the age of 89, as he watched the winds of hurricane Katrina threaten the very house he was standing in, he merely remarked, "Well, now we have a project." That indomitable spirit is



Electrical Power Termination Structure



Lock and Dam Structure

what we all need to display in the current economic and political turmoil. This is not the first nor the last economic cycle the world will see, nor the last political strife that humankind will face. We will keep our skills sharp, our wits about us, be prepared to show up and solve problems of whatever nature, and look for opportunity in all areas.

There are many problems we have helped solve that are unrelated to the wellhead production of oil and gas. We have designed terminals to store and transport oil and compressor stations and pipelines to move gas. These systems have to be built and revised to accommodate changing product flow even when hydrocarbon prices are low. We have designed chemical plants that use oil and gas as feedstock and hence are benefitted by low hydrocarbon prices. We have designed steel mills, food storage and processing facilities, containerized shipping facilities, and port facilities to ship various products in solid, liquid, and gaseous states. We have designed roads, bridges, rail yards,

and ferry landings. We have designed mining facilities for various metallic ores. We have designed specialty buildings for educational use, for blast resistant exposure in chemical plants, and for stringent U.S. Coast Guard requirements for living quarters on floating offshore platforms. We have designed world record directionally drilled crossings of electric transmission lines under rivers and bays. We have designed airports, heliports, and manufacturing facilities for space vehicles. We have helped purchase and ship components for industrial projects all over the world. And we have helped clients work through the ever increasing maze of permits that are required to build any project.

So if you have a problem of any technical, logistical or project management nature that needs solving, there is a high probability that we have done something like it before;

and if we have not, we thrive on figuring out solutions to new challenges. We have an organization of people with deep and varied experience and a willingness to tackle anything that comes over the horizon. True to his Viking sailing heritage, Waldemar's



Coffee Blending Facility

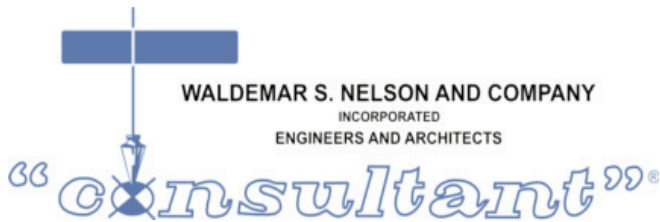
spirit still lives in our crew, and he would be proud to see that seventy years after he founded the company we are still piloting it through whatever storms the world economy throws at it.



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1st Quarter, **2016**



Kenneth H. Nelson, P.E., President Waldemar S. Nelson and Company,
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and Eric Belin, FACC-GC President

The French American Chamber of Commerce recently awarded Charles W. Nelson, P.E. with the Donald A. Hoffman Distinguished Member Award. Annually, this honor is presented to well deserving individuals and/or companies that have demonstrated outstanding service and promotion of French trade and investment in the Gulf Coast Region.

Ken Nelson accepted the honor on Charles Nelson's behalf at the Annual Dinner in February.

Waldemar S. Nelson and Company is Proud to Announce our 2016 Engineering News Record Ranking

Top 500 Design Firms

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