



Global Technical Training Services, Inc. Newsletter



### The State of the Industry

Sid Crouch, GTTSi Chief Technical Consultant

Ken Braun of the Capital Research Center recently reported that the U.S. anti-nuclear industry is spending more than \$2.3 billion annually - opposing zero-carbon nuclear energy. His report identifies > 200 anti-nuclear non-government organizations (**NGOs**) some you probably know: Sierra Club (**\$151 Million in revenue in 2021**), League of Conservation Voters (**\$115M**), Environmental Defense Fund (**\$285M**), Natural Resources Defense Council (**\$186M**), and Public Citizen (**\$8M**).

Yes, there are NGOs that support nuclear power plants, like the Nuclear Energy Institute (**\$50M in revenue in 2021**), Clean Air Task Force (**\$32M**), and the American Nuclear Society (**\$12M**), but the funding of the anti-nuclear industry is much greater...over 14 times greater. The size and funding of the anti-nuclear industry is a threat to our operating power plants and the next generation nuclear power plants. They also threaten the long-term prosperity of the U.S., as their influence has resulted in policies that have turned everything “every which way but loose” resulting in increased energy costs. No matter how you cut it, the nuclear sector is outmanned and outgunned.

What can we do? We must continue to support pro-nuclear NGOs and share our knowledge and experience. For example: Nuclear and hydro are the backbone of low-carbon electricity generation - providing 75% of the global low-carbon generation. Over the past 50 years, nuclear power has reduced CO2 emission by over 60 gigatons - nearly two years' worth of global energy-related emissions. **Net Zero NEEDS Nuclear!**

*I welcome your comments or questions - [sid.crouch@gttsi.com](mailto:sid.crouch@gttsi.com)*

## Highlights

Plans at the Palisades Nuclear Plant

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GTTSi Team Member Highlight: Nick Ertle

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Did You Know?

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Canada and Japan Have Restarted Nuclear Plants

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Germany Dismantling Wind Farm Turbines for Coal

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GTTSi and Treeways

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GTTSi Job Board Update



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## PLANS AT THE PALISADES NUCLEAR PLANT SITE CONTINUE

The Nuclear Power Division of Holtec (*Holtec*) has signed a Teaming Agreement with Hyundai E&C for the joint development and deployment of 2 to 4 SMR-160s in the U.S. at the Palisades nuclear plant site. They plan to start construction of the first SMR by 2026 with the goal of completing this project within 3 years.

Hyundai Engineering and Construction Co., Ltd. (*Hyundai E&C*) is a South Korean construction company headed by President and CEO, Young Joon Yoon.

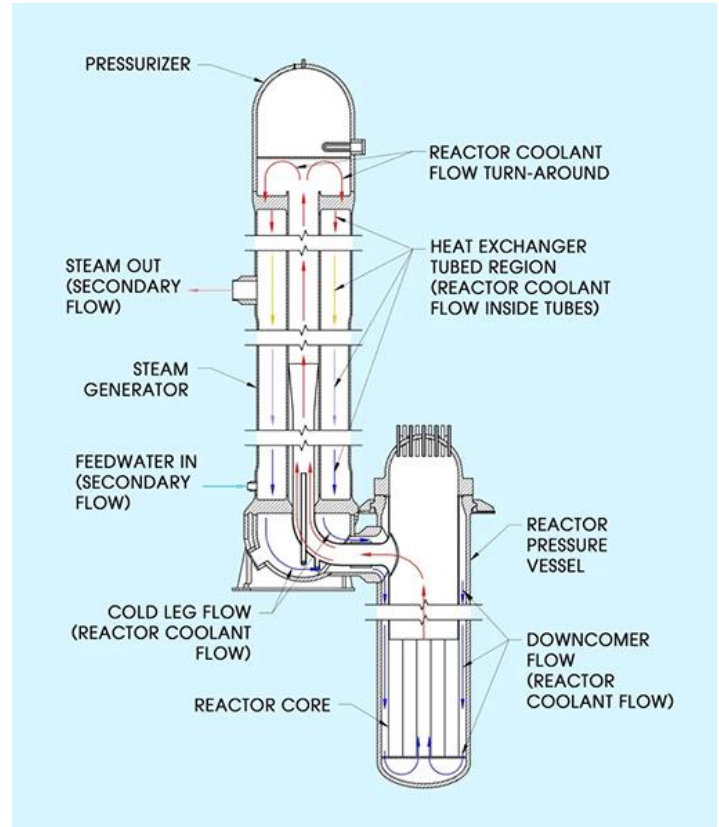
Their SMR-160 is a small modular pressurized water reactor designed with passive safety systems. The reactor, steam generator, and spent fuel pool are located within containment, with the reactor core located below grade. It has a rated electrical output of 160 megawatts (*MW*).

Holtec International is a U.S. energy technology company headed by their founder, President and CEO Dr. Kris Singh.

Dr. Singh stated that the “first SMR will be constructed on the Palisades nuclear plant site in Michigan,” anticipating power production by 2029. Although Holtec is working for permission and funding to restart Palisades, they are also pushing for construction of 2 to 4 SMRs at the Palisades plant site.



*Hyundai & Holtec sign Teaming Agreement*  
*Photo Credit: Holtec International*



*SMR -160*  
*Photo Credit: Blue Wave AI Labs*

Holtec International is a diversified energy technology company headquartered in Jupiter, FL with a corporate credo of “*A Generation Ahead by Design*”. They are recognized for their technology innovations in the field of carbon-free power generation, specifically commercial nuclear and solar energy.

Their \$260 million *Krishna P. Singh Technology Campus*, located on the Delaware River in Camden, NJ, houses a technology center, a large manufacturing facility and a reactor test loop with several auxiliary buildings to support the ongoing development of Holtec’s small modular reactor, SMR-160. The company expects to train and employ over a thousand workers from the South Jersey region. 🌐

## GTTSi TEAM MEMBER HIGHLIGHT: NICK ERTLE

Meet GTTSi employee Nick Ertle, an Engineer with over 40 years of experience from Installation and Commissioning systems and planning, to design, application, and consulting.

During the past four years, Nick has been at Plant Vogtle as the designated Subject Matter Expert and Lead Contractor responsible for the I&C Group's deliverables.

In the execution of his assignment, Nick has provided engineering and technical support to the Digital I&C Group at Vogtle 3&4, including programmatic development of "Disaster Recovery" procedures and instruction sets and implementation. He has also served as Senior Engineering Technical Lead for Scaling Program activities and document maintenance, Unit 3's plant Start-up, and Unit 4's Hot Functional Testing.

In addition, he recently qualified as a Design Engineer with Southern Nuclear at Plant Vogtle.

Nick is a true Nuclear Power Industry professional with diverse engineering and leadership experience in Domestic and International settings including the United States, Canada, Korea, Taiwan, and Romania, along with direct experience with BWR/PWR/AP1000 & CANDU reactors.

Georgia Power's Plant Vogtle Units 3 & 4 are the first newly constructed nuclear units built in the United States in more than 30 years. These nuclear units play an essential role in Southern Company's goal of net zero greenhouse gas emissions by 2050. Once all four of these units are operating, expected within the first quarter



*Photo Credit: Nick Ertle, GTTSi*

of 2024, they will be the largest carbon-free generation asset in the country.

GTTSi is proud to be a part of this monumental undertaking, and our participation is made possible by working with extraordinary people like Nick Ertle.

Nick is just one of the many industry experts at GTTSi - check us out at [www.gttsi.com](http://www.gttsi.com) or on LinkedIn at [www.linkedin.com/company/gttsi](http://www.linkedin.com/company/gttsi).



## DID YOU KNOW?

In 2017, the US became a net exporter of natural gas (**LNG**) for the first time since 1957. The increase in LNG exports began when the Sabine Pass LNG Terminal (**pictured right**) came online in 2016. Today, during the first half of 2023 our LNG exports averaged 11.6 billion ft<sup>3</sup>/day, making the US the world's top LNG exporting country.

*Sabine Pass LNG Terminal  
Photo Credit: NS Energy*



*Kakrapar Atomic Power Station  
Photo Credit: DAE (GODL-India), GODL-India*

India has finally begun commercial operation of their domestically designed pressurized heavy water reactor (**PHWR**) at the Kakrapar Atomic Power Station in Gujarat. Unit 3 is a 700 MWe nuclear power plant that did not begin its commercial operation until nearly 3 years after its *initial criticality*. Its twin unit, Unit 4, is in an advanced stage of commissioning and is scheduled for commercial operation in March 2024. India has a nuclear fleet of 17 PHWRs, two VVER PWRs (**pressurized water reactors**), with eight reactors under construction and planned for completion by 2027. Three of their nuclear plants are in suspended operation – two BWR's and one PHWR.

The VVER is a Russian design (**VVER stands for "water-water energy reactor"**) with the distinguishing PWR feature of horizontal steam generators.

A solar power developer (**Green Energy Partners**) and a nuclear power developer (**IP3 International**) have formed a joint venture to develop an industrial park in Virginia (**641 acres - adjacent to Dominion's Surry Nuclear Power Plant**) that will feature data centers powered by hydrogen gas generators and SMRs (**small modular reactors**). Four to six SMRs would provide energy for 20 to 30 data centers, along with generating hydrogen fuel, and providing backup power for the Virginia power grid.



*Artistic Conception of the Surry Green Energy Center  
Photo Credit: Green Energy Partners*

## CANADA AND JAPAN: RESTARTED NUCLEAR POWER PLANTS

Canada's Bruce Power Unit 1 has been restarted and is back in service. This 823 MW PHWR (**pressurized heavy water reactor**) is synchronized with Ontario's energy grid for the first time in 15 years. Unit 2 isn't far behind and should be back in operation within weeks. Bruce Power Station is located about 245 km northwest of Toronto on the shores of Lake Huron.

"This is a significant achievement for Bruce Power and another tangible milestone that the restart project is nearing completion," company president and CEO Duncan Hawthorne said in a statement.

The return to service of these two units will bring Bruce Power Station back to its eight operating reactors and reclaim their renowned status of "largest nuclear generating facility in the world".

Across the ocean in Japan, Kansai Electric Power Company has restarted Takahama - 1, a 780 MW PWR (**pressurized water reactor**). It became the 11th nuclear power plant operating in Japan. The Takahama Station has four nuclear power plants - all PWRs and located in the Fukui prefecture (**western Japan**).

All of Japan's commercial reactors were shut down following the Fukushima disaster and are not allowed to restart until they have passed stringent new safety checks by the Japan's NRA (**Nuclear Regulation Authority**). Eleven of the 33 operable nuclear power plants have met post-Fukushima safety standards: Sendai -1&2, Genkai -3&4, Ikata -3, Mihama -3, Ohi -3&4 and Takahama -1,3, & 4. Ten nuclear power plants are still under examination by the NRA, and one of them, Takahama -2, is expected to meet all the post-Fukushima safety standards and become operational this month. 🌐



*Bruce Power Station on the Eastern Shore of Lake Huron in Ontario, Canada  
Photo Credit: Bruce Power*

## GERMANY DISMANTLING WIND FARM TURBINES FOR COAL

In 2023, Germany's state-controlled firm, Securing Energy for Europe (SEFE), signed a 20-year deal with U.S. Venture Global LNG to purchase 2.25 million tons of LNG annually. In addition, they also signed a deal to purchase and import LNG from QatarEnergy for at least 15 years beginning in 2026. As a result, Germany, Europe's biggest economy, plans to have as much as 70.7 million tons per year of LNG import capacity by 2030, which will make it the 4<sup>th</sup> largest LNG importer in the world.

Despite these deals, Germany and other European countries are still struggling with their dependence on Russian oil and gas, supplies that were terminated with Russia's invasion of the Ukraine. Faced with the prospect of no Russian gas, Germany started installing floating storage and regasification units (**FSRUs**) last year.



*Pictured above is RWE dismantling a wind turbine at North Rhine. This project is to allow further expansion of an open-pit coal mine.*

*Photo Credit: EUobserver*

In April 2023, Germany went ahead with their plans to shut down their three remaining nuclear power plants. Without their production and the loss of natural gas and oil from Russia, Germany is being forced to take other measures to keep their electric grid reliable, which includes importing natural gas, plans to build new gas-fired power plants, and to resurrect or extend the operation of coal-fired power plants.

Germany has already resurrected or extended past their closing dates at least 20 coal-fired power plants, and they intend to put up for auction gas power plants in 2023 as part of a strategy to add between 17 GW and 25 GW of gas-fired power capacity as an alternative to coal by 2030. They intend for these gas-fired power plants to also have the capacity to use hydrogen as a fuel.

RWE, a German multinational energy company that generates and trades electricity in the Asia-Pacific region, Europe, and the United States, brokered a deal with the German government last year to mine coal (***under the pretense that it would aim to be coal-free by the year 2030***). They have now begun dismantling at least eight wind turbines, at the North Rhine Westphalia region wind farm, to make room for an open-pit coal mine so they can excavate up to 20 million tonnes of highly pollutant lignite coal, also known as "brown coal".

Today, approximately 20% of Germany's electricity comes from coal, but it's increasing. The German government says that between July and September last year over a third of their electricity was generated by coal-fired power plants. 🌐

## GTTSi UPDATE: L.D. HOLLAND AND TREEWAYS-THE CLEAR PATH FORWARD

Mr. L.D. Holland, Human Performance Senior Consultant for GTTSi, has been working with Treeways, a nationwide group of vegetation management providers.

Considering the recent utility fires in California and Hawaii, it is easy to see how important vegetation management is to a utility's critical infrastructure. L.D.'s experience in this arena with both nuclear power plant operations and transmission and distribution gives him a unique understanding of how the tools of Human Performance (**HP**) provide value not only in day-to-day operations, but also to the bottom line of any company committed to incorporating HP into their framework.

L.D. began with an introduction to Treeways management about Human Performance, and how its connection with safety is so important in today's work environment. L.D. then provided classroom instruction followed by "in-the field" application with the vegetation



*Treeways Vegetation Crew  
Photo Credit: L.D. Holland*




*L.D. Holland and Buddy Rogers, Treeways COO  
Photo Credit: L.D. Holland*

crews, helping them apply their newly learned HP tools / skills to their jobs.

In the future, L.D. will take the data and observations, gathered while he worked with the crews, to provide an assessment and value-added not only to the customer but also to the company.

Johnny Priest, Treeways CEO, recently said this has been the best money Treeways has spent and that Treeways will be a GTTSi customer for life.

To learn more about the Human Performance services offered by GTTSi, please visit <https://gttsi.com/our-services/human-performance/>

Pictured above is L.D. Holland, GTTSi Human Performance Senior Consultant, and Buddy Rogers, Treeways COO. L.D. is just one of the many industry experts at GTTSi - check us out at [www.gttsi.com](http://www.gttsi.com) or on LinkedIn at [www.linkedin.com/company/gttsi](http://www.linkedin.com/company/gttsi). 

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## GTTSi Job Board

GTTSi has been providing professional services to the energy and nuclear industry since 1980. We are an MWBE (*minority woman-owned business enterprise*) and have served over 80% of the US commercial nuclear facilities, 8 Federal agencies and prime contractors, and one foreign government. If you are qualified and interested in any of the job opportunities listed below, please contact us at [ginfo@gttsi.com](mailto:ginfo@gttsi.com) or call **864.882.3111**.



- Training Developer -Sales Force -Juno Beach, FL
- Project Coordinator -Palm Beach Gardens, FL
- Transmission Line Engineer -Remote
- E&C Project Manager -Solar -Juno Beach, FL
- Battery Storage Engineer
- Mechanical Engineer – Hot Harsh Environments / CFD - Remote

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