

Nuclear News

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Jim Reinsch
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ANS President



Also in this issue

**Health Physics
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Reinsch: Supporting the nuclear renaissance

BY ALAN FIORENTE

WITH THE RESURGENCE of interest in nuclear energy in the United States and worldwide, Jim Reinsch has a very demanding schedule. In the past few months, he has traveled throughout the United States, Europe, Asia, and Australia, visiting customers on behalf of Bechtel Nuclear. In conjunction with those trips, he has visited several local sections of the American Nuclear Society and nuclear societies in the United Kingdom, China, and Australia.

Reinsch notes that there are a number of synergies between being president of Bechtel Nuclear and of ANS. Since Bechtel customers span the globe, this enables him to meet one of his ANS initiatives, which is to engage ANS in a more international role. Traveling abroad has allowed him to do just that. He has found that there are common drivers for using nuclear energy worldwide, most notably proven performance, affordability, energy security and independence, and emission-free energy. He says that powering the future with nuclear energy not only provides a clean energy source but also allows countries to meet their Kyoto protocol commitments.

This is the start of an exciting time in the expansion of nuclear science and technology in the areas of energy, space, medicine, and industry. Reinsch feels fortunate to be part of this nuclear renaissance, in which ANS plays a significant role by:

- Providing a professional home for those with careers in the various sectors of nuclear science and technology.
- Promoting its members' contributions to the expansion of nuclear technology.
- Providing a forum to develop and apply nuclear technology to benefit all humanity.
- Serving as a credible voice for the dissemination of nuclear information through *Nuclear News* and *Radwaste Solutions*.

Alan Fiorente is Manager of Marketing and Business Development for Bechtel Nuclear.

As president of Bechtel Nuclear and of the American Nuclear Society, Jim Reinsch is actively promoting the advancement of nuclear science and technology.



Jim Reinsch, in his office at Bechtel Nuclear headquarters in Frederick, Md., is the 51st ANS president. (Photo/graphics: Bechtel)

Another common initiative for Reinsch at Bechtel and with ANS is his profound interest in mentoring and training the younger generation. With an increasing percentage of the current nuclear work force nearing retirement age, it is now time to invest in the future and pass the baton of knowledge to the younger generation of engineers, “the faces of tomorrow,” he says. He is actively participating in finding a place for the young-generation members in ANS and is involved in several young-generation initiatives at Bechtel as well.

Life profile

Reinsch’s life growing up was much like it is today—centered around Bechtel, which after four generations of family leadership is still a privately held company. His father, Harry, was a 39-year employee of Bechtel and was president of Bechtel Power from 1975 to 1985. Reinsch’s family life was

plants were engineered or constructed by Bechtel, along with nuclear steam supply system vendors General Electric, Westinghouse, Combustion Engineering, and Babcock & Wilcox. The younger Reinsch’s tenure at Bechtel covers more than 30 nuclear plants, the restoration work at Three Mile Island-2, 25 steam generator replacements, seven reactor pressure vessel head replacements, and all recent new generation activities, such as siting studies, early site permits (ESP), and combined construction and operating license (COL) activities.

Reinsch is now a partner and senior vice president of Bechtel and president of Bechtel Nuclear. He also serves on the board of directors of the Nuclear Energy Institute (NEI). His experience has encompassed domestic as well as international nuclear power: He served as senior regional executive for Southwest Asia while residing in New Delhi, India, and as president of Bechtel

Canada while residing in Toronto, Ontario. Also, since Bechtel has performed engineering or construction services on more than 50 percent of the 103 nuclear power plants in the United States over the past four decades, working for Bechtel has given Reinsch the opportunity to meet

a broad base of nuclear customers and stakeholders across the country.

Reinsch, the 51st ANS president, is the fourth Bechtel employee to be elected president. The other three were Milton Levenson (1983–1984), Jim Lake (2000–2001), and Larry Foulke (2003–2004).

Reinsch lives with his wife, Yvonne, in Frederick, Md., and cherishes his time with his two children, Wendy and Steve, and six grandchildren. He is also in frequent contact with his mother, Helen, who lives in Palm Springs, Calif.

World view

Reinsch is proud of the worldwide accomplishments of nuclear energy. Currently, 440 nuclear power plants provide about 16 percent of the world’s electricity while emitting no greenhouse gases. This world fleet of nuclear power plants currently displaces more than 2.5 billion metric tons of CO₂ per year. Nuclear plants are reliable, efficient sources of baseload electricity capable of operating around the clock. In fact, the world’s nuclear reactors set an all-time world record in 2004, with a total production of approximately 2.686 billion MWh. This record-setting performance was attributed to the high-capacity performance in the United States and Sweden, along with restarts and commissioning of new units worldwide.

Much more will surely be needed, Reinsch says, with the global population projected to grow from 6.3 billion to 9 billion people by 2050. World energy needs are projected to be 31 trillion kWh, which is 2.3 times the current world electricity production of 13 trillion kWh per year.

United States perspective

Reinsch points out that the U.S. Department of Energy has projected that the United States will need 50 percent more electricity by 2025 to drive our economy and sustain our quality of life. Providing this new electricity supply and maintaining clean air are dual national imperatives. The nuclear energy industry is powering up and poised to build new, advanced nuclear

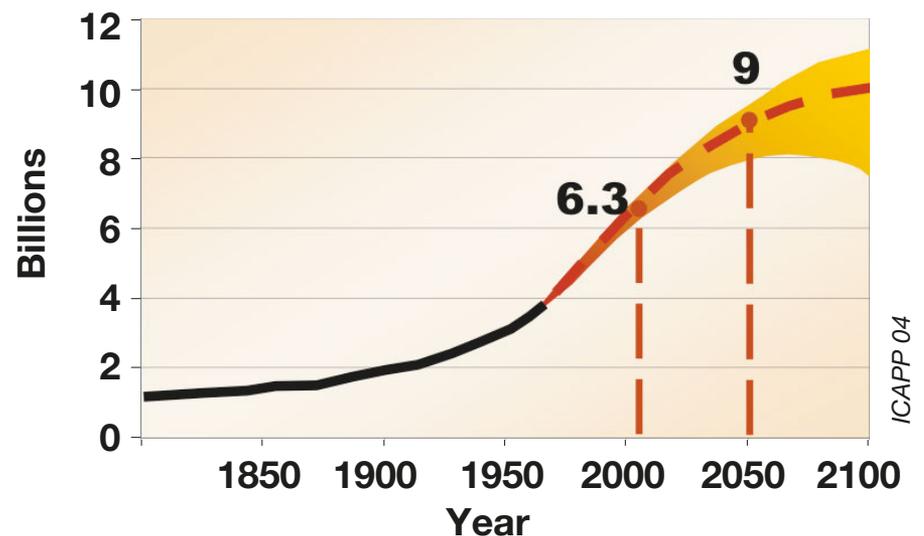
Reinsch is a strong proponent of clean, safe energy to protect the Earth in the 21st century, and, to this end, he believes that nuclear energy must play a significant role.

deeply influenced by the values espoused by Bechtel—honesty, ethics, and responsiveness—which were passed down to Reinsch and his brothers, John and Richard. There were many advantages to growing up in a Bechtel family, among them the opportunity to travel the world and meet new friends from various walks of life in the 17 different grammar schools he attended.

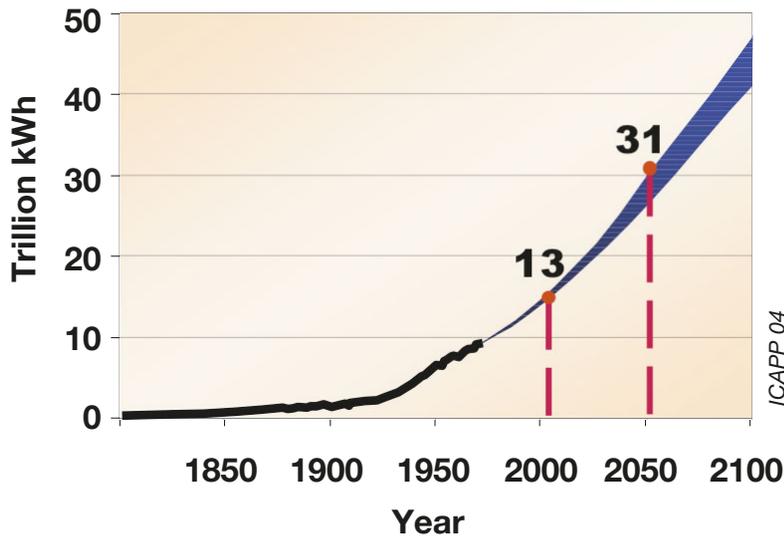
While attending college in the 1960s, Reinsch held summer internship jobs with Bechtel as a laborer, rodman, chainman, and intermediate engineer. After graduating from the University of Maryland with a B.S. degree, Reinsch began his career with Bechtel in the Labor Relations Department.

Reinsch says that his life and his father’s life span two generations with the Bechtel family. These two generations encompass all 57 years of Bechtel’s involvement with nuclear science and technology. His father was at Bechtel Power in 1948 for the building of the Atomic Energy Commission’s nuclear accelerator at Los Alamos; in 1949 for the building of the Experimental Breeder Reactor (EBR-I); in 1955 for the construction of Dresden, the world’s first privately financed nuclear plant; in 1966 for the construction of the first high-temperature gas-cooled reactor at Peach Bottom; and through the 1960s and 1970s, when 33 more nuclear

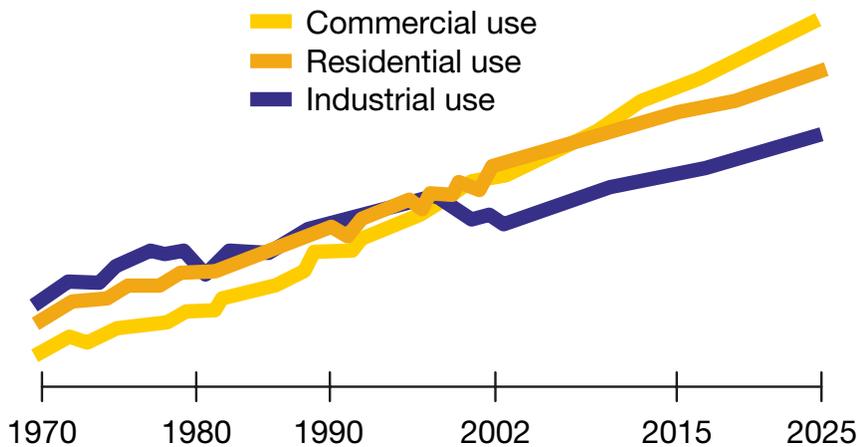
World Population



Demand for Electricity



America Needs 50% More Electricity by 2025



Source: U.S. Department of Energy

plants to meet energy demands and clean air objectives.

Today, the United States' 103 operating nuclear power plants, soon to be joined by the Tennessee Valley Authority's [TVA] Browns Ferry-1, which is scheduled for restart in 2007, produce more electricity than any other energy source except coal. Nuclear energy plays a dramatic role in keeping air emissions low. At the same time, it is safe, has a proven performance record, is affordable, and can provide energy security and energy independence.

The environmental advantage

Like James Lovelock, the noted British environmentalist, Reinsch is a strong proponent of clean, safe energy to protect the Earth in the 21st century, and, to this end, he believes that nuclear energy must play a

significant role. The United States, he says, must increase electricity output to power its economy into the future and provide energy for an ever-expanding population, in a way that has the lowest possible impact on our environment.

Today, Reinsch notes, approximately 30 percent of the United States' electricity comes from the combination of nuclear energy, hydropower, and renewables—all sources that do not emit greenhouse gases. Nuclear energy represents 72 percent of this nonemitting electricity supply.

Reinsch adds that the carbon emissions displaced by U.S. nuclear power plants are equivalent to the carbon emissions from approximately 130 million passenger cars.

The foundation is in place

Nuclear energy's value today is well-proven, Reinsch says, and powers one of

Country	% of Nuclear Power to Total Output
Lithuania	80
France	78
Slovakia	57
Belgium	55
Sweden	50
Ukraine	46
South Korea	40
Slovenia	40
Switzerland	40
Bulgaria	38
Armenia	35
Hungary	33
Czech Republic	31
Germany	28
Finland	27
Japan	25
Spain	24
U.K.	24
Taiwan	22
U.S.A.	20

Source: World Nuclear Association

Top nuclear output: U.S. nuclear plants generate more electricity than any single country, but rank 20th as a percentage of total electricity.

every five homes and businesses in the United States. Since 2000, U.S. commercial nuclear reactors collectively have operated at an average 90 percent capacity factor, making them the most efficient baseload power generation plants.

In addition, improved efficiencies, along with power updates, in nuclear power plants over the past 10 years have helped meet the rising electricity demand nationwide. These increases have been equivalent to adding 19 new 1000 MW plants to the U.S. electricity grid. A 1000 MW plant would power a city the size of Boston or Seattle.

Most U.S. power companies are extending the operating licenses for their nuclear power plants by 20 years. Approximately three-quarters of U.S. nuclear power plants have either renewed their licenses or have indicated their intention to do so.

Looking toward the future

Reinsch is heavily involved with the U.S. nuclear industry's stakeholders to help make new nuclear generation a reality. The nuclear energy industry and the U.S. government are collaborating to bring the benefits of new, advanced-design nuclear plants to bear.

Building a nuclear power plant in today's competitive electricity marketplace is a major commitment, and a number of companies are looking again at the nuclear option. Many nuclear power plants operating today experienced delays during construction and entry into commercial operation that were attributed to regulatory and political obstacles, which increased utilities' costs dramatically and eroded investor confidence.

Reinsch notes, however, that over the past 12 years, the nuclear energy industry and the U.S. government have taken steps to improve the regulatory process, construction techniques, and plant operating efficiencies. And with the growing importance of the clean-air benefits of nuclear energy, as well as lower and more stable operating costs, new nuclear power plants are a national necessity.

U.S. lawmakers have demonstrated a strong commitment to support new nuclear power plant development. They have appropriated initial funds to share costs to demonstrate an entirely revamped federal process for licensing new nuclear power plants and have signaled their support for continued funding of these efforts into the future.

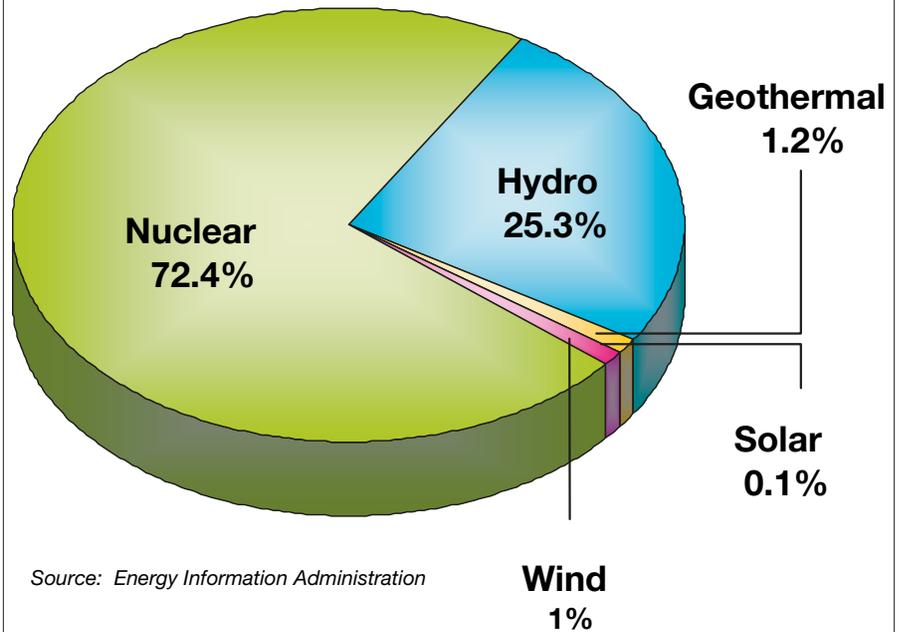
Utilities, suppliers doing their part

Reinsch cannot talk about new generation without mentioning the tremendous financial investment that government, utilities, and reactor suppliers are making to secure the future of nuclear power. The nuclear energy industry is taking steps, including the demonstration of the new licensing process and the creation of favorable business conditions, to ensure that utilities will be ready to order a new nuclear power plant when market conditions are right.

On the technology front, nuclear system vendors have engineered new advanced designs that promise significantly lower construction and operation and maintenance costs, greater reliability, and passive or redundant safety systems. Several advanced designs being made ready for deployment include General Electric's Economic Simplified Boiling Water Reactor (ESBWR), Westinghouse's AP1000 reactor, and Framatome ANP's EPR.

Members of a utility-led consortium, NuStart Energy Development—which includes Constellation Energy, Entergy, Exelon, FPL Energy, Progress Energy, Southern Nuclear, and TVA—as well as several other prominent utilities, such as Dominion Generation and Duke Power,

Nuclear Energy is America's Largest Source of Emission-Free Electricity

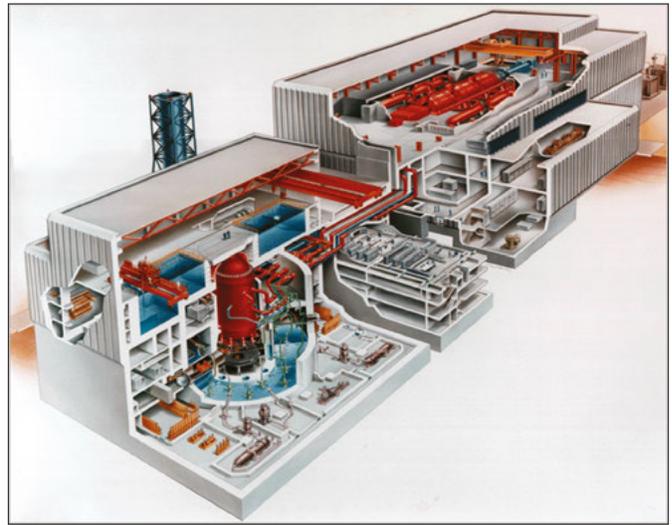


The certification of a reactor design codifies the Nuclear Regulatory Commission's approval that the design meets its safety standards.

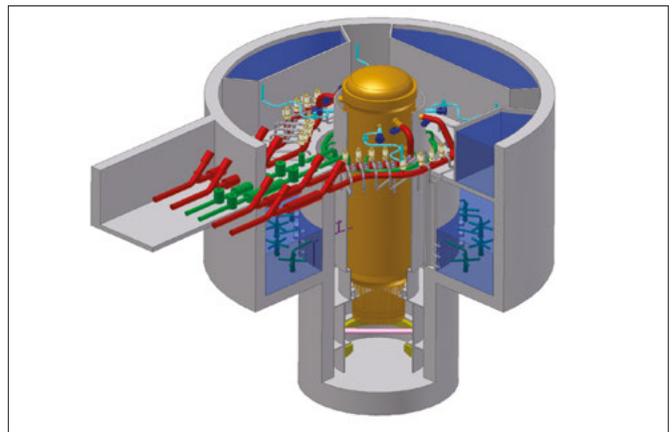
The early site permit gives a company approval for a plant site before a decision is made to build a plant.

The combined construction and operating license (COL) permits the construction and operation of a specific nuclear reactor design at a given site, provided specific acceptance criteria are met.

New NRC licensing process: The federal licensing process provides early public input and resolution of safety issues before plant construction begins.



Westinghouse's AP1000 (left) and General Electric's ABWR (right) designs have been approved by the NRC.



Both Framatome ANP's EPR design (left) and General Electric's ESBWR design (right) are to be submitted for NRC review.

<p>No policy assistance</p>	<p>\$47–\$71 per MWh</p>
<p>Engineering costs (3 plants); no policy assistance</p>	<p>\$31–\$46 per MWh</p>
<p>Limited production and investment tax credit for nuclear</p>	<p>\$25–\$45 per MWh</p>

New nuclear power plant costs: With cost-sharing programs from DOE's Nuclear Power 2010 program and legislative financial incentives, nuclear is very competitive.

are reviewing their options for future nuclear generation under the federal government's Nuclear Power 2010 program solicitation. These options range from studies, to site selections, to investigating or preparing ESPs, and to testing and demonstrating the COL process.

Creating business conditions

Reinsch observes that the construction of large power plants in the United States is a major, capital-intensive endeavor. Some members of the financial community assign such projects a high level of risk. The nuclear energy industry and the federal government are collaborating to bring the benefits of new, advanced nuclear power plant designs to the market. Congress and the current administration are creating and implementing programs to provide greater certainty to those utilities that are willing to risk capital to build new nuclear power plants to meet the nation's energy needs.

To this end, the U.S. government has undertaken the following initiatives to restart the U.S. nuclear industry:

1. The DOE's Nuclear Power 2010 program. This program, cost-shared between industry and the DOE, would validate the

new licensing process and establish a well-defined, predictable, and stable process; support detailed design and engineering on advanced reactor designs to provide cost and schedule certainty; and demonstrate the ESP and COL processes.

2. Proposed legislation to offer financial incentives for utilities and suppliers to take the initiative necessary to secure financing for building the first few new nuclear power plants.

3. Proposed "risk insurance" for unexpected delays caused by regulatory or political obstacles.

Leading the way

These are exciting times for Reinsch as president of Bechtel Nuclear and of ANS. Hardly a day goes by without a positive message in the media concerning new nuclear generation. He welcomes the powerful messages being sent by ANS, NEI, utilities, nuclear reactor suppliers, the U.S. government, and other stakeholders across the country, none more powerful than the president of the United States, who has spoken out in favor of nuclear energy a number of times. President Bush has been urging Congress to pass legislation that would make America more secure and less dependent on foreign energy by including the use of safe, clean nuclear energy.

Reinsch says it is very satisfying and re-

warding to be part of Bechtel Nuclear and to play a major role in the nuclear renaissance, including the restart of Browns Ferry-1, the performance of cost feasibility studies for the deployment of new-generation plants, site selections, ESPs, and COL application activities for several major U.S. utilities, as well as support of design certification efforts for reactor technology.

There is no better time to be president of ANS, he adds. In the past 50 years, nuclear applications have moved from the laboratory and have found a home in the world's factories, food processing plants, health care facilities, the power generation industry, and deep space.

Some 10 000 ANS members worldwide represent all aspects of nuclear science and technology—government, utilities, suppliers, architect/engineers, consultants, laboratories, and academia. Reinsch sees ANS as providing the foundation to develop and apply this technology to benefit all humanity

and serving as a forum for the exchange of credible nuclear information.

As ANS members forge ahead during this nuclear renaissance, Reinsch says, they must all be prepared to push our science

“The United States must have a strong nuclear energy component in its national energy profile if it wants to achieve and sustain its national, economic, and environmental security and its high standard of living.”

forward, demonstrating the peaceful use of the atom and making new nuclear generation in the United States a reality.

In conclusion, Reinsch states, “The United States must have a strong nuclear energy component in its national energy profile if it wants to achieve and sustain its national, economic, and environmental security and its high standard of living.” ■

Bechtel Nevada, prime contractor to the National Nuclear Security Administration, has an immediate opening for an Assistant Project Manager. Work location is at the Remote Sensing Lab, Nellis Air Force Base, Las Vegas, NV.

ASSISTANT PROJECT MANAGER

Successful candidate serves as the Assistant Project Manager (APM) to the Crisis Response (CR) Project and reports directly to the CR Project Manager. Works closely with Task Leaders to ensure state-of-the-art equipment and methodologies are employed in nuclear search, detection, and identification in support of National Nuclear Security Administration and Defense Threat Reduction Agency. APM also supervises the development of detailed budgets and schedules, develops cost estimates, and tracks potential overrun and over-commitment of respective project/sub-project funding; monitors progress and initiates actions to ensure project milestones and schedules are met and work is performed within budget; contributes to the achievement of program business objectives as directed by the CR Project Manager and Emergency Response & Nonproliferation Program Manager; ensures that customer contract, including major correspondence and working relationships between BN and the customer, is maintained throughout the duration of the project; and monitors and controls all contractual commitments to ensure all work is being performed in accordance with specifications and terms of the contract and that change orders are timely.

Successful candidate should possess a Bachelor's degree in a nuclear physics discipline or other related discipline (Masters or PhD preferred), or equivalent training and experience, plus 10 years' of progressive work experience that included leadership and management of technical organizations. Project Management experience is highly desired. Candidate must possess excellent verbal and written communication skills to interface with tact, diplomacy, and authority in an effective manner with all levels of personnel. Demonstrated skill to work independently, organize and prioritize work, manage multiple tasks and changing priorities, mediate conflict, and apply leadership concepts and techniques. Formal Project Management training is highly desired. Must have ability to create and maintain highest levels of confidentiality when dealing with proprietary information and sensitive situations.

Bechtel Nevada offers a competitive salary and benefits package.



If your qualifications match our requirements, mail/fax/e-mail your resume to: Bechtel Nevada, Attn: Paulette Connelly, Ad #68-05, P.O. Box 98521, NLV011, Las Vegas, NV 89193, fax 702-295-2448, or email connelp@nv.doe.gov.

EOE. U.S. citizenship required. Pre-placement physical examination, which includes a drug screen, and the ability to obtain a security clearance are required.

Faculty Position(s) Available

DEPARTMENT OF NUCLEAR ENGINEERING

Dwight Look College of Engineering • Texas A&M University

The Department of Nuclear Engineering at Texas A&M University invites applications for the positions of assistant or associate professor with a specialization in health physics and/or radiological engineering. These are tenure-track positions, and the rank depends on qualifications. Applicants in all fields of health physics and/or radiological engineering will be considered. Applicants should hold a Ph.D. or equivalent in a relevant field, should have a demonstrated research record, and should excel in teaching. While students completing their Ph.D. will be considered, professional experience in academia, national laboratories or industry is valued.

The Department of Nuclear Engineering at Texas A&M is currently one of the largest and most diverse programs in the nation, with a long history of strong research at the graduate level and an undergraduate enrollment that has doubled in the past two years. The new faculty member(s) will be integral contributors to the department's continued drive toward increased national recognition and excellence.

See <http://nuclear.tamu.edu> for additional information.

Qualified applicants should forward a résumé and names and contact information for four references to:

Dr. John W. Poston, Sr.
Department of Nuclear Engineering
Texas A&M University
3133 TAMU
College Station, TX 77843-3133

The search will remain open until all the positions are filled. Texas A&M University is an Equal Opportunity/Affirmative Action employer.

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Department of Nuclear Engineering

