



## NUCLEAR ENERGY FACILITIES: SAFE AND SECURE

A UniStar Issue Brief

For half a century, the United States nuclear energy industry has operated with an exceptional safety record. With 104 generating facilities across the country, nuclear energy is in wide use and with proven safe results.

But the industry didn't just spend that time maintaining safety; it spent years and invested billions of dollars to become even safer. The advanced designs and increased safety and security features of new nuclear reactors will ensure that the next fleet of nuclear energy facilities will provide Americans with even more confidence that their energy sources are as safe as they are clean, affordable, and reliable.

### A PROVEN RECORD

UniStar Nuclear Energy's parents, Constellation Energy and EDF Group, bring together years of experience, strong safety records, and industrial innovation that mark them as leaders in the global nuclear energy industry. In 2007, Constellation Energy Group's five operating nuclear units produced 61 percent of the power supplied to Mid-Atlantic customers.<sup>1</sup> EDF is a world leader in nuclear energy operations, with 58 operating reactors supplying nearly 80 percent of France's total electricity supply.<sup>2</sup>

According to the U.S. Bureau of Labor Statistics (BLS), the nuclear energy industry is one of the safest industries in the United States. In fact, fields such as publishing, administrative support and even telephone call centers experience more safety incidents than the nuclear energy industry.<sup>3</sup>

In 2008, the nuclear industry reported 0.13 incidents per every 200,000 work-hours.

### Incidence Rate of U.S. Occupational Injuries\*

Education and Health Services	5.4
Professional and Business Services	2.2
Information Services	2
Financial Services	1.5
Nuclear Industry	0.13

\* 2005–2007 average of OSHA recordable injuries per 200,000 work-hours

Sources: Bureau of Labor Statistics; World Association of Nuclear Operations

### SAFETY BEGINS WITH TECHNOLOGY

UniStar's philosophy on safety draws from a simple principle: expect the unexpected, and plan for every possible contingency.

We are practical, forward-thinking, and plan for the unexpected. We do this by drawing on experience and innovation to continually improve our operations. People on our staff have been inside every one of America's operating nuclear energy facilities. Those people have been working for decades to make sure public safety is protected.

For nuclear energy, the safety features of the reactor design are the heart of safety planning. That is why we selected AREVA's U.S. EPR™ for all UniStar nuclear energy facilities.

“The U.S. EPR is the cornerstone of the UniStar business model. AREVA’s design is the safest, most secure, advanced nuclear power plant technology available in the world today.”

*George Vanderheyden, President and CEO, UniStar Nuclear Energy*



### The U.S. EPR™ Technology

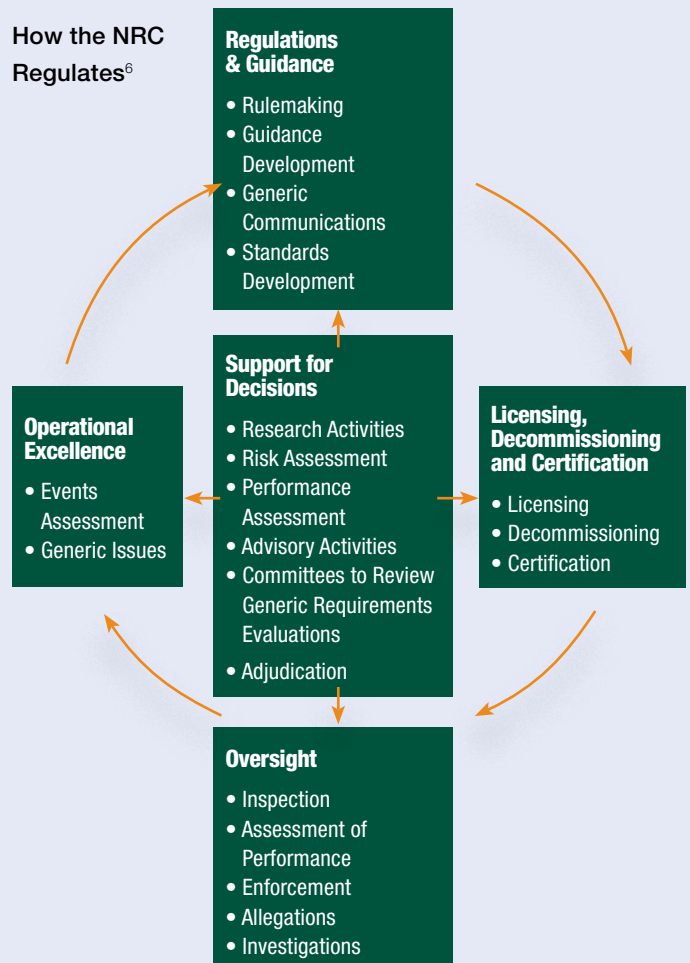
UniStar’s proposed new nuclear energy facilities may be more expensive than competing designs, but the investment is worth it, because it prioritizes safety over cost.<sup>4</sup> The government didn’t force us to do this. The reactor manufacturer designed the reactor to these higher specifications, and we selected this design specifically because the U.S. EPR™ offers the highest level of safety ever constructed. We are proposing new nuclear facilities that are even safer than existing nuclear plants, because we know you’re skeptical and we have to earn your trust if we are to succeed.

### TRUSTED AND VERIFIED

In addition to developing new, ultra-safe designs, the nuclear energy industry has a proven track record of safe operations. These operations are the object of constant review and refinement by industry, independent standard setting organizations, and regulatory agencies in a process of continuous improvement.<sup>5</sup>

We are heavily regulated by the U.S. Nuclear Regulatory Commission (NRC), which maintains inspectors on our sites at all times. But we are not content to simply meet existing standards; we have taken the initiative to exceed the already stringent government standards.

#### How the NRC Regulates<sup>6</sup>



## Oversight and Regulation at the NRC

NRC oversight touches every aspect of the nuclear fuel cycle and has strengthened and streamlined regulations and licensing procedures considerably in the past 20 years to meet operational safety goals. NRC officials are on-site daily at existing U.S. nuclear energy facilities to ensure that plant operating procedures, maintenance and security measures are in compliance with federal regulation.

Advanced technology, operational safety, and stringent independent regulation provide a solid base for safety and security, but attaining the highest level of safety requires capability and dedication on the part of the people involved in the nuclear facility's daily operation.

Plant employees engage in training activities on an ongoing basis. All nuclear energy workers start training their first day on the job and continue to train and improve as long as they work in the industry.

In addition to undergoing continuous training, all nuclear energy facility employees and contractors are subject to background and criminal history checks before they are granted access to the facility.

All three of Constellation Energy's nuclear facilities have achieved Star status, the highest safety designation under the Occupational Safety and Health Administration Voluntary Protection Program.<sup>7</sup>



## SECURING THE FUTURE

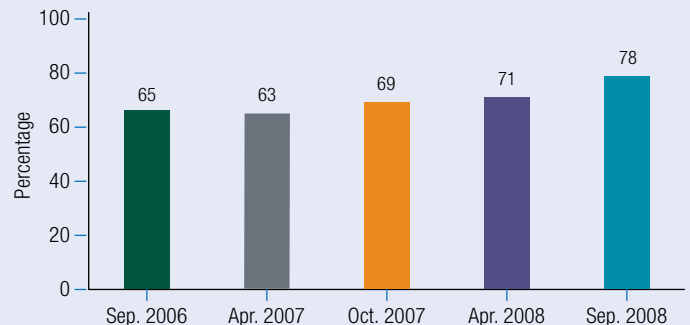
Safety is not complete unless the facility is fully secure. Although physical structures such as the containment and reactor domes are designed to provide impenetrable layers of protection, additional layers of armor are used to prevent and protect the facility from attack.

All nuclear energy facilities are protected by well-trained and highly specialized security officers on-site 24 hours a day, seven days a week. Today, the nuclear energy industry employs 8,000 security officers who are charged with securing and fortifying site perimeters, patrolling security zones, monitoring surveillance equipment and supervising cyber security at facilities.<sup>8</sup>

Despite unparalleled security and protection, nuclear energy facilities updated and enhanced security after September 11, 2001.

### Safe Nuclear Operations

A national poll finds that most U.S. residents believe America's nuclear energy facilities are safe and secure.<sup>9</sup>



Source: Bisconti Research

## Nuclear Energy Facilities Set the Standard for Security

One year after the September 11, 2001 attacks, the Center for Strategic and International Studies issued a report on the vulnerability of our nation's energy infrastructure.<sup>10</sup> The report found that commercial nuclear power plants are among the most security conscious facilities in the United States, with extensive threat protection features. When it comes to our national infrastructure, nuclear energy facilities are not only not weak points, they are the archetype for security.

"I appreciate the efforts that have been made by Constellation Energy and Calvert Cliffs Nuclear Power Plant to ensure the protection of all of our citizens. The plant's constant communication and preparation is the foundation for this outstanding and reliable relationship we enjoy together."

*Mike Evans, Calvert County sherriff*



*Photo courtesy of DAEC.*

## SAFE AND SECURE FOR LIFE

Today's nuclear facilities' plans are focused on maximizing safety and security before groundbreaking even begins. Today's advanced reactor designs, redundant safety system, continuous training

programs and enhanced security means nuclear energy facilities are safer today than they have ever been. And that is only the beginning. UniStar Nuclear Energy has picked a design that exceeds federal safety standards. We are spending more than is required because the plants we build today will last 60 years. And in that time, we will continue to innovate. That is what makes us different—an absolute commitment to continuous improvement, with each improvement making our facilities cleaner, safer, and more reliable.



If you want to look closer at the research behind the information in this publication, please visit our web site at [www.unistarnuclear.com](http://www.unistarnuclear.com). There you will find an annotated version of this Issue Brief with links to the original research and other data behind this publication as well as all of the other publications in the Issue Briefs series.

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This UniStar Issue Brief is a publication of UniStar Nuclear Energy, a joint venture of Constellation Energy and EDF Group. It is one in a series of Issue Briefs presenting information and interpretation on important issues surrounding the growth of electrical generation in the United States. UniStar and its partners are working to meet future energy needs with a new generation of nuclear generating facilities, the most effective combination of clean, reliable, and environmentally-friendly electrical production. We have confidence that an informed public armed with the facts behind our energy options will support increasing the role of nuclear generation for meeting the nation's future electricity demand. The Issue Briefs series is just one part of UniStar's efforts to keep the public fully informed. ©2009 UniStar Nuclear Energy. All rights reserved.

## REFERENCES

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