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Regulatory Perspectives on U.S. Nuclear Power Infrastructure - Current and Future

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I was sworn in as a Commissioner a year ago, and I've been rapidly learning details of the Commission's operations since then. Based on my education during those months, I welcome the opportunity to share with you today some perspectives on the current and potential future of nuclear power generation in the U.S. from the Nuclear Regulatory Commission's point of view.

My previous career in national security at Los Alamos and then on Capitol Hill, underpinned by my graduate training, has led me to define national security in very broad terms - to encompass the military, the economy, the environment, and certainly to include our nation's energy supply.

There is no doubt in my mind that our nation will be challenged to meet its growing needs for electricity generation in future decades. I believe that the nation should encourage fuel diversity as it strives to meet these challenges, seek to minimize pressure on limited supplies of natural gas, and reduce its dependance on foreign energy sources.

For this new electricity generation, the nation will need to tap renewables as much as possible. But the intermittent character of solar and wind systems means that they cannot play a dominant role in supply of baseload electricity unless we invent new, very low cost, energy storage systems. Our large coal reserve provides another opportunity for expanded electricity generation, but significant expansion of that resource will depend on development of cost effective, low emission plants.

The only other potential source of significant new electricity generation within the next few decades is nuclear energy. But answers to many questions will dictate whether nuclear energy will play a strong supporting role.

In any discussion of nuclear power and the potential for new plant construction, we must always remember that the entire industry has a vital job to attend to first: safe and secure operations of existing plants. The public needs to be confident of ongoing safe and secure performance of existing nuclear plants to support the potential for new nuclear plants.

The NRC has the responsibility to establish and enforce the safety and security standards for all civilian applications of nuclear technologies. Its Congressionally mandated mission is to:

> License and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

In my view, without the nuclear power industry's continued perseverance toward adequate safety and security, nuclear energy will not play a future role, and our nation will have an immense energy shortfall.

I presented a talk similar to this one at the 2005 American Nuclear Society annual conference. The theme of that conference focused on a "half century" view of opportunities for new nuclear power plants.

The requirement for safe and secure operation of our nuclear plants certainly will remain during that half century, or at least for as long as we operate nuclear plants. But my own view is that the time frame within which we will determine our nation's future capabilities in nuclear energy is far more compressed than half a century, perhaps a couple of decades at the most. Unless near-term progress is demonstrated in the United States within that shorter time window, which includes construction of a significant number of new plants, we may lose much of our technical capability to support nuclear energy using domestic resources.

The United States led the world's development of nuclear energy, but there hasn't been a new construction permit issued here since 1978. That dearth of new plants was driven by several factors, but its impact has been enormous. Our nation's capacity for new plant construction has had limited exercise and has partially atrophied. We are no longer the world's only leader in these areas. Today, we have enough of the infrastructure, both human capital and industrial capability, to recover, but we are in danger of losing these capabilities in the not too distant future.

However, it is evident that the nuclear power industry enjoys strong support from recent Administration and bipartisan Congressional actions. The visits last year of President Bush to Calvert Cliffs and of former President Carter to D.C. Cook, along with their endorsements for the future of nuclear power, helped to underpin the growing national confidence in the important role that nuclear energy can play. The President's signing of the Energy Policy Act of 2005 authorized a host of important new programs and opportunities for this industry, including production tax credits and loan guarantees. And the FY 2006 Appropriations Bill provided strong support for nuclear energy, including increased funding for the NRC to perform security reviews and new reactor licensing activities. Furthermore, although the exact numbers are subject to change, the NRC currently is

expecting to receive applications[1] in late 2007 and in 2008 for Combined Construction and Operating Licenses to build and operate up to 17 advanced power reactors at 11 sites.

As I mentioned previously, this positive climate for new construction requires that the NRC and industry ensure the safety and security of existing plants. How will we accomplish our current safety goals and thereby provide the foundation for possible future growth?

First, the industry must maintain a clear focus on safe operations and assure no blemish on its stellar safety record - that no member of the public has ever been injured by any release from a civilian plant in the United States.

With this focus, the industry under the watchful oversight of the NRC must constantly guard against another serious incident like that encountered in 2002 at Davis-Besse when boric acid corroded through most of the pressure vessel.

The Commission needs to observe and report on industry's continued safety performance, as we further risk-inform and performance-base our regulations and implement our oversight processes. In general, industry's safety trends have shown improvements over the last decade.

The NRC revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants in 1999-2000. The new oversight process uses more objective, timely, and safety-significant criteria in assessing performance, while seeking to more effectively and efficiently regulate the industry. It also takes into account improvements in the performance of the nuclear industry over the past 20 years.

The objective is to monitor performance in three broad areas – reactor safety (avoiding accidents and reducing the consequences of accidents if they occur); radiation safety for both plant workers and the public during routine operations; and safeguards for protection of the plant against sabotage or other security threats. To measure plant performance, the oversight process focuses on seven specific "cornerstones" which support the safety of plant operations in the three broad performance areas. In addition to the cornerstones, the reactor oversight program features three "cross-cutting" areas, so named because they affect and are therefore part of each of the cornerstones.

The revised oversight process provides more information on plant performance than in the past, and the information is available on a more frequent basis. This information is placed on the NRC's Web site.

The public credibility of this assessment process rests both on each plant's full commitment to accurate and unbiased performance indicator data collection and reporting, and on the dedication and knowledge of NRC resident and regional inspectors. In this respect, both the industry and the NRC work toward maintaining public confidence in this process.

In addition to public assurances on safety and security, nuclear power will not advance unless the industry and the public have confidence that the Commission's licensing procedures are well understood, incorporate significant public input, and result in timelines. The Commission's performance on license renewals, power uprates, and new plant licenses will be measured in this process.

License renewals began with Calvert Cliffs in 2000, and now the Commission has renewed licenses at 39 plants. Renewal applications are currently under review for 12 plants. With few exceptions, the Commission has processed these renewals within about 22 months.

However, where renewal applications were not of sufficient quality, the Commission has not hesitated to return a licensee's application package or to delay its approval until quality had improved – applications for four units have fallen into this category.

Power uprates have also been processed on a generally reliable schedule by the Commission, even though some of the larger uprate requests require very careful evaluation of the effect of increased power on internal reactor components. This is currently an area of careful study at the Commission.

Turning now to the future, but still focusing primarily on the broad area of reactor safety, licensing of the first new reactors will be a process watched carefully by all stakeholders, both public and private. Here the Commission will use an untested new process described in our regulations. This framework was instituted in 1989 and provides for a combined construction and operating license or COL. The creation of a COL process was to address the uncertainty inherent in the historical process of permitting construction of a plant without the full assurance it would be granted an operating license.

This new framework also includes the Early Site Permit or ESP process and the Standard Design Certification. Both the ESP and the design certification may be referenced to simplify a utility's application for a COL. The overall goal of the COL process is to provide a more stable, efficient, and predictable regulatory framework for utilities that might wish to pursue a new reactor license. At the same time, the Commission has been careful to include appropriate opportunities for public input throughout the parts of the COL process.

The ESP process allows early resolution of site-related issues and effectively allows a utility to "bank" a site for future construction. Three applications have been received, for the North Anna, Clinton, and Grand Gulf sites, and the Commission is scheduled to issue final decisions in 2007 for Clinton and Grand Gulf. The North Anna application was originally on a similar track but was recently revised by the applicant and a new schedule is being determined.

The first standard design certification was issued in 1997. Today four advanced designs are certified, the latest being the just-approved Westinghouse AP1000, another certification review is in progress, and others are expected to be filed. The Commission has estimated times for completion of a certification to range from 42 to 60 months depending on the complexity of the design and its departure from previously certified designs.

The COL application process enables a utility to reference an ESP and a certified design to expedite the process. If both the ESP and certification are in hand, the review and hearing process for the combined license can be anticipated in less than 30 months. Nevertheless, the first utility that tests the COL procedure will be moving into uncharted waters, but into an area that the Commission has anticipated and is prepared to address.

As seen here, the NRC currently has been actively engaged with industry and potential

applicants who have expressed serious interest in submitting COL applications in the 2007 and 2008 timeframe. Due to its ongoing dynamic nature, this table represents a huge challenge to NRC's budgeting, resourcing, and staffing plans.

One component of these new licensing activities involves international activities. I am highly supportive of the NRCs current plans to work with French and Finnish regulatory officials on our licensing review of the Evolutionary Pressurized Reactor (EPR). In the coming months, the Commission will consider participating in an even more expansive multi-national design approval program. I feel strongly that we must participate in the development of an international process soon, as a success will provide greater assurance that plants built in other nations will benefit from the regulatory practices and demands that we impose on our own plants. And if we delay in engaging other countries, I'm afraid that some type of program will evolve without us. It is far better for us to be involved with global standardization now, than to be faced with some form of international standard that does not meet the regulatory standards we demand.

Turning now to the broad area of security, I first must note that before 9/11 our nation's nuclear power plants were probably the most secure element of our civilian critical infrastructure. After September 11, 2001, the NRC and our licensees faced the need and challenge of progressively enhancing the security and preparedness of nuclear facilities and materials, while simultaneously continuing to perform, with undiminished attentiveness, the requisite safety mission. Fortunately, we were prepared to do both. During the last 4 years, the NRC staff has worked very closely with the Commission and our licensees in addressing an array of issues that are vitally important to the safety and security of the American people. The same is true of the nuclear industry and our sister Federal agencies. Most of the heavy work has been done; we are now doing the painstaking job of providing closure to the security framework through rulemakings.

Security was further enhanced by passage of the Energy Policy Act of 2005, which provided specific direction and provisions, some of which have been long sought by the agency. For example, the Act authorizes the Commission to allow security personnel at licensed facilities to carry and utilize a broader class of weapons. The Act also required the Commission to issue orders requiring fingerprinting, for criminal history purposes, of broader classes of individuals.

The NRC and the industry need to know the consequences of potential terrorist events. In this regard, the NRC has conducted detailed, site-specific engineering studies of a number of typical nuclear plants to assess their capabilities to withstand an attack using a commercial or general aviation aircraft as a weapon. Many other damage scenarios were addressed by licensees, as required by the 2002 and 2003 orders. Further analyses were recently performed, including spent fuel pool structural analyses to provide further insights regarding structural robustness of the spent fuel pools. The combination of results, including industry assessments, provide a sound framework for decision-making and for determining if additional analysis is needed.

From the studies we have conducted to date, we continue to believe that the likelihood is low that airplane or realistic vehicular bomb attacks would damage the reactor core or the spent fuel pool and cause a release of radioactivity capable of affecting public health and safety. Moreover, mitigative strategies are available to protect the public in the unlikely event of a radiation release, and additional practical enhancements of the mitigation capabilities are being analyzed and considered.

After 9/11, the NRC initiated a three-phase effort to conduct assessments of plant safety and security measures. Phase I assessments were done in accordance with the February 2002 Order which, among other things, required nuclear power plant licensees to identify readily available mitigative strategies addressing a range of potential scenarios that may result in the loss of large areas of nuclear power plants due to a large explosion or fire. As a result of these assessments, licensees were required to implement mitigative strategies, and the NRC staff has been and will continue to verify licensee compliance with the requirements of this Order.

The schedule calls for completion of all Phase I actions this year, and the documentation of these actions into licensee's security plans in early 2007. The results will then be a component of our established and stable regulatory framework.

Phase 2 focuses on additional independent spent fuel pool assessments. The NRC has completed site-specific independent assessments at each nuclear power plant to identify additional measures or strategies to mitigate the consequences of a wide range of terrorist attacks involving spent fuel pools. The assessments began in July 2005 and were completed in November 2005. We expect that the book will soon be closed for Phase 2.

Phase 3, which is aimed at possible measures beyond the scope of the February 2002 Order, focuses on Independent Reactor Core and Containment Assessments. As of today, 38 site assessments have been completed. NRC and its licensees are performing these site-specific, independent assessments, at each of the 64 nuclear power plant sites to identify additional measures or strategies to mitigate the consequences of a wide range of potential terrorist attacks. These assessments began last October and are scheduled to be completed at all sites by April 2006. The NRC's independent assessments include reviews of each licensee's identification of further alternative means for achieving safety functions in scenarios that might disable the normal front-line and backup systems used to achieve safety functions. Completion of the ongoing assessments is a necessary and sufficient condition to provide closure to the enhanced safety and security framework of U.S. nuclear power plants.

Going back to the nuts and bolts of physical protection, licensees have made very significant improvements in their defensive capabilities and strategies, and concurrently we have made significant improvements in force-on-force exercises and evaluations.

Some of the security enhancements are obvious as one approaches any plant perimeter such as this intrusion barrier. Many more changes are less obvious. They reflect improvements in internal operations, procedures, and physical arrangements. They also involve carefully negotiated and tested protocols between the NRC and local, state, and federal responders. Airborne threats are addressed through the operations of the Department of Homeland Security and the North American Aerospace Defense Command (NORAD). With these many enhancements, our nuclear plants are even more secure today.

Prior to 9/11 the NRC conducted mock attacks to test the capabilities of the licensees' security program. After 9/11 and following a successful pilot program, we implemented a full program of enhanced force-on-force exercises and evaluations. These enhancements included increasing the standards for mock adversary force physical fitness, training, and knowledge of attack strategies to emphasize offensive capabilities. The NRC will continue to oversee and evaluate approximately 22

force-on-force exercises each year, or about once at each site every three years, and each licensee also conducts their own drills each year.

To summarize our actions on security, I believe that we have established, using a risk-informed approach, the key NRC requirements needed to provide added assurance of the security of civilian nuclear facilities and materials in the United States. We started early, from a sound and exercised base, and progressed methodically. At the same time, many sister Federal agencies, especially DHS, have been engaged in bolstering homeland security and protecting the Nation's critical infrastructure. We have developed strong ties with these agencies, resulting in improved national capabilities.

All of us have a common purpose -- to protect our country, its people, and its way of life -- and we are working more closely together than ever before. We have worked extensively with the Department of Homeland Security and have adopted the National Response Plan, increased involvement with the development of the Department of Homeland Security National Infrastructure Protection Plan and partnered with DHS to conduct comprehensive reviews of offsite response. The NRC staff continues to interact with Department of Justice's Joint Terrorism Task Forces in the field and has enhanced NRC coordination and communication of threat intelligence and suspicious activities through increased access to various reporting sources. We have also established additional secure communication capabilities at NRC to facilitate timely and effective crisis communication with Federal partners. There can be no question that our civilian nuclear power plants are among the most secure civilian sites in the world.

Here at MIT, and as further highlighted by recent media interest, I think I should mention our nation's test and research reactors, which I strongly believe are a vital component of our nation's nuclear infrastructure in support of nuclear power as well as in the use of nuclear materials for medicine and industry.

Prior to 9/11, security plans and procedures were required for research reactors. These requirements employed a defense-in-depth approach that was geared to the specific radiological hazard for each reactor, and that was aimed at detecting, delaying, assessing and initiating responses to security events. Subsequent to September 11, the NRC ensured that numerous additional security-related measures were instituted at research reactors to enhance these defenses against facility sabotage or theft of nuclear material. In addition to these actions, the NRC assessed the security of the research reactors to further determine whether any additional security measures were warranted. Results to date indicate that there are no credible scenarios that could result in significant radiological consequences to the public.

The radiological consequences of an attack on research reactors would be low due to the small quantities of radioactive material present, the reactor structure and shielding designs. Also, attempts to sabotage the facility or steal the nuclear material would trigger a rapid armed response and activate pre-established emergency response plans. Even if a sabotage attack were attempted against a research reactor, we are convinced that the potential for significant radiation-related health effects to the public is highly unlikely.

The NRC maintains a thorough oversight program of all licensed research reactors. This oversight program includes safety and security inspections and evaluations to ensure that the public is protected. NRC also evaluates the current threat environment in coordination with the Department of

Homeland Security, the FBI, the intelligence community, and State and local law enforcement agencies.

As I'm sure you are aware, in 2005, the ABC television network aired a "Prime Time" story related to research reactor security and, in fact, prominently discussed the MIT research reactor facility. The NRC staff has evaluated the questions raised by ABC regarding research reactor security.

The NRC reexamined licensed research reactor security plans, procedures and systems to determine if the required security measures were in place. One example of ABC's concerns was that some doors to buildings housing reactors were open and unmonitored. Upon checking, the specific doors in question were found to be publicly accessible classroom/office buildings and were not required to assure adequate security of the reactor. Another example was ABC's assertion that so-called "guards" were not always present or alert. Our review determined that the specific traffic control and other campus personnel identified by ABC were not required by the approved security plans or for any other regulatory purpose. Based on our review of all questions raised by ABC, in one case we determined that implementation of a security requirement was deficient, and although it was considered to have low significance, the NRC has ensured that corrective action was taken.

Each specific concern for each research reactor was evaluated through NRC's allegation review process. Based on these evaluations, NRC continues to conclude that security plans, procedures and measures are adequate to protect public health and safety from the potential radiological effects of research reactors. NRC will continue to assess information from all sources to ensure adequate protection of public health and safety.

However, we have not limited our review to only those research reactors shown in the ABC story. We also issued letters to every research reactor licensee to obtain additional information and emphasize our expectations for maintaining effective security in the current threat environment. In these letters, we requested each licensee to verify its implementation of the previous site-specific security measures and provide additional details. The information we requested will help the NRC to re-validate how the existing security requirements, as supplemented by the additional security measures conveyed to the research reactor community after 9/11, are being implemented to help protect public health and safety.

Based on our continuing review of site-specific security, and our knowledge of the potential risks and threats, we continue to believe that research reactors, including the MIT reactor, remain safe and secure. If as a result of the continuing research reactor oversight activities, if NRC determines that any additional security measures are necessary to assure the health and safety of the public, we will not hesitate to implement additional security measures as appropriate.

Finally, I'd like to address another significant challenge for both the industry and the NRC: the impending loss of many of our most experienced employees who are nearing retirement, and the attendant loss of the historical and collective lessons that they have learned. It isn't sufficient to just hope that these lessons will have been passed on to younger generations. There must be proactive actions to mentor our less experienced employees to pass on the important values that are essential to continued safe use of the nuclear energy option.

Human capital in the nuclear arena is a subset of a much larger national issue. I have serious

concerns with the current state of our nation's workforce preparation for science and engineering in general. This issue was recently discussed in significant detail in a comprehensive report issued by the Task Force on the Future of American Innovation.

That report noted that the number of science and engineering positions in the U.S. workforce has grown since 1980 at almost 5 times the rate of the U.S. civilian workforce as a whole. But in contrast, the number of science and engineering degrees earned by U.S. citizens is growing at rate below the growth in the total U.S. civilian workforce. Further, our preparation of qualified science and engineering graduates is falling further behind other nations with each passing year.

One measure of this issue, collected in the compendium of Science and Engineering Indicators compiled by the National Science Board, is the ratio of initial university science and engineering degrees to the population of 24 year-olds. In 1975, this ratio for the U.S. exceeded most of the surveyed nations, except Finland and Japan. By 2000, our ratio was exceeded by 16 nations, including again Finland and Japan, plus France, Taiwan, South Korea, UK, Sweden, Ireland, and Italy, to name a few.

The magnitude of this national issue was highlighted when the distinguished Norm Augustine testified before the U.S. House of Representatives on behalf of the recent National Academy of Sciences report entitled, "Rising above the Gathering Storm," which discusses the loss of competitive edge by the United States because of a lack of investment in education and research. My good friend Chuck Vest, who may be pretty well known here, helped develop that report. To quote just a bit of Norm Augustine's very sobering testimony, he said:

> It is the unanimous view of our committee that America today faces a serious and intensifying challenge with regard to its future competitiveness and standard of living. Further, we appear to be on a losing path.

Recently however, a package of three bills, known as the "PACE" Act, for Protecting America's Competitive Edge, has been introduced in the Senate with widespread bipartisan support (with more than 60 co-sponsors so far, including both the Senate Majority and Minority Leaders). If passed, this Act will support and complement the President's American Competitiveness Initiative (ACI) announced during his State of the Union address that, among other things, will substantially increase investment in research and development, education, and tax incentives to encourage innovation. Of particular interest here at MIT would be the proposed doubling of basic research funding over 10 years starting with an average of 9.6% funding increase in FY 2007 for the DOE Office of Science, the National Science Foundation, and the National Institute for Standards and Technology.

Turning now to the NRC's specific human capital challenges, I've been very impressed with the range of staff development and recruiting programs that are underway within the NRC. The Commission has provided fellowships and scholarships, as well as a number of cooperative education programs. We have strong participation in our Leadership Potential Program, our Nuclear Safety Professional Development Program, and in our Senior Executive Service Candidate Development Program. In past years, the Agency met its targets for staff recruitment.

Legislation introduced by the U.S. Senate Environment and Public Works Committee and

incorporated in the Energy Policy Act of 2005 will provide additional tools to develop and attract qualified new staff. But it remains to be seen if we can meet our ambitious goal for this current year and similar goals in the future.

Knowledge management is an important part of staff development, and these programs are being emphasized at the Agency. By knowledge management, I mean the process by which knowledge gained over decades of work by senior scientists and engineers is translated, retained, and made available in ways that facilitate its transfer to new generations of workers.

I'm very pleased that the Commission sponsors a wide range of programs to encourage new graduates in specialties appropriate to our own needs. But the issues of workforce development and human capital are hardly unique to the Commission. The entire industry faces severe shortfalls. And if the advertised rebirth of new plant construction occurs, there will be increased needs and increased competition for new staff. While any new plant construction will help inspire more students to view nuclear technologies as a secure long-term career choice, it's unlikely that the supply of new candidates can increase very quickly.

Whether you are a member of the faculty or a student at this premier scientific and technology university, I challenge each of you to devote some time over your career to actively helping to increase secondary-level student interest in science and technology careers. All of us need to redouble our efforts in conveying to these students the excitement and opportunity that await them in these many fields, and of their importance to the future of our country.

At this point in the lecture, I'll insert a public service announcement: Whether you are a student, a member of faculty, or otherwise have a technical background, this message is for you. I can tell you from personal experience that public service can be an immensely satisfying component of any technical career. At the NRC we have had, and will continue to have, technical challenges covering the widest range of nuclear technologies, in the fields of power reactor and industrial and medical uses of nuclear materials. In addition, we continue to need fresh perspectives of technically knowledgeable people to contribute to the development of public policy for the safe use of nuclear technologies. The NRC was recently honored as one of the best federal agencies for employee satisfaction and I highly recommend it as a career choice or at least as a component of any technical career. Whether you are interested in regulatory aspects or in the research foundations for our regulatory decisions, there are exciting opportunities for you at the NRC.

I'd like to close with discussion of the challenges the Agency, the industry, and the public will face if the number of reactor license applications approaches the levels announced by industry. Industry has briefed the Commission on their tentative plans for COL license applications, plans that total about 17 reactors, each with the stated goal to be operational by 2015.

The NRC is going to be incredibly challenged to respond to any number of applications that approaches the plans advertised by industry. On the one hand, the NRC must and is doing all it can do to build the human capital resources to accommodate this number. But there are many actions that industry should be considering if their expectation is that the NRC can successfully evaluate this number of licenses.

Industry must maximize standardization of licensing applications, designs and construction

activities so that the NRC can leverage, to the extent practicable, similar standardization in the Agency's review process. In addition, COL applications must meet very high quality standards. The NRC will not compromise our review standards to expedite approvals, and the burden is on the applicant to provide the required level of quality.

In summary, the industry's performance, as well as the Commission's regulatory oversight, will be carefully observed by the public. Only if both the industry and the Commission demonstrate strong performance can public confidence be maintained at a sufficient level to permit an objective and reasoned public dialogue on the future of nuclear energy in this country. The foundation for retaining the nuclear energy option in the future rests squarely on the continued safe nuclear plant performance of the current operating reactors and continued strong and independent NRC oversight. In addition, it also depends on improved security and stable NRC licensing processes with appropriate public input. Meeting these goals in as public a manner as possible, while balancing openness and information security, is absolutely necessary. Well-informed citizens are essential to better understanding operations, risks, and benefits involving the nuclear energy option.

Thank you for the opportunity to share these thoughts with you today, and I'd be happy to take any questions you might have.

1. As of February 23, 2006 - expected COL applications include:
Dominion (1 ESBWR at North Anna site)
Duke (2 AP1000s at TBD site)
Progress (2 AP1000 plants at Harris site)
Progress (2 AP1000 plants at TBD site)
NuStart (2 AP1000s at Bellefont site)
NuStart (1 ESBWR at Grand Gulf site)
Southern Nuclear Company (1 AP1000 at Vogtle site)
Constellation (2 EPRs at Calvert Cliffs site)
Constellation (2 EPRs at Nine Mile Point site)
Entergy (1 ESBWR at River Bend site)
SCE&G (1 AP1000 at Summer site).