BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 100009-EI
FLORIDA POWER & LIGHT COMPANY

MAY 3, 2010

IN RE: NUCLEAR POWER PLANT COST RECOVERY
FOR THE YEARS ENDING
DECEMBER 2010 AND 2011

TESTIMONY & EXHIBITS OF:

NILS J. DIAZ

DOCUMENT NUMBER-DATE
03679 MAY-3 ≥
FPSC-COMMISSION CLERK

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DIRECT TESTIMONY OF NILS J. DIAZ

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MAY 3, 2010

Q. Please state your name and business address.

A. My name is Nils J. Diaz. My business address is 2508 Sunset Way, St. Petersburg Beach, Florida, 33706.

Q. By whom are you employed and what is your position?

A. I am the Managing Director of The ND2 Group (ND2). ND2 is a consulting group with a strong focus on nuclear energy matters. ND2 presently provides advice for clients in the areas of nuclear power deployment and licensing, high level radioactive waste issues, and advanced security systems development.

Q. Have you previously provided testimony in this docket?

A. No.

Q. Please describe your other industry experience and affiliations.

A. I presently hold the position of Commissioner, Florida Energy and Climate Commission, as well as board memberships in National Labs and private institutions. I previously served as the Chairman of the United States Nuclear Regulatory Commission (NRC) from 2003 to 2006, after serving as a Commissioner of the NRC from 1996 to 2003. Prior to my appointment to the

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NRC, I was the Director of the Innovative Nuclear Space Power and Propulsion Institute (INSPI) for the Ballistic Missile Defense Organization of the U.S. Department of Defense, and Professor of Nuclear Engineering Sciences at the University of Florida. I have also consulted on nuclear energy and energy policy development for private industries in the United States and abroad, as well as the U.S. Government and other governments. I have testified as an expert witness to the U.S. Senate and House of Representatives on many occasions for the last 25 years. Additional details are provided in my Summary Resume, which is attached as Exhibit NJD-1.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits NJD-1 through NJD- 4, which are attached to my direct testimony.

Exhibit NJD-1	Summary Resume of Nils J. Diaz, PhD
Exhibit NJD-2	NRC Combined Licensing Processes
Exhibit NJD-3	New Reactor Licensing Applications
Exhibit NJD-4	Nuclear Power Plant Technology Evolution

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide a summary of the role of the U.S. Nuclear Regulatory Commission (NRC) in licensing FPL's Turkey Point Units 6 and 7 and to discuss issues important to the continuing project decision-making process. I arrive at the conclusion that FPL's management approach to the Turkey Point 6 & 7 project and related decisions is consistent with the overriding objective of minimizing nuclear power plant cost and

schedule risks, in accordance with the U.S. system of regulation of nuclear power and with best management practices.

Q. Please describe how your testimony is organized.

A. My testimony includes the following sections:

1. Roles and Responsibilities of the NRC
2. Statutory Responsibilities of the NRC
3. New 10 CFR Part 52 Reactor Licensing Framework
4. Generation III+ Reactors and AP1000 Design Certification Status
5. Spent Fuel Disposition and Waste Confidence Decision
6. FPL's Project Management Approach to Turkey Point 6 & 7

Q. Please summarize your testimony.

A. My testimony addresses the NRC's role and responsibility to conduct an effective and efficient licensing process for new nuclear power plants, as well as other regulatory and oversight activities in which the NRC engages to accomplish its safety objectives. The testimony discusses opportunities for public participation in NRC licensing, and the protection afforded by employee concerns programs that were encouraged by NRC policy statements. The NRC, as the successor to the Atomic Energy Commission, is endowed by the Atomic Energy Act of 1954, as amended, with exclusive jurisdiction over nuclear safety and by the additional enacted laws forming the statutory frame for protection of public health and safety and the environment. Next, a summary discussion is provided for the primary nuclear power plant regulation, 10 CFR Part 50, and the enhanced licensing process codified in

1989 by the NRC at 10 CFR Part 52. Then, I discuss the risk minimization advantages and benefits implemented by the combined licensing process of Part 52, including a brief description of the synergy between a Combined Operating License Application (COLA) and a Design Certification. The status of the Turkey Point 6 & 7 COLA is addressed within the context of the Generation III+ AP1000 technology advantages and its design certification. A brief update is then provided on the used/ spent (spent) fuel disposition program and the NRC Waste Confidence Decision, again placed in the context of the ongoing licensing proceedings for the Turkey Point COLA. Finally, I review FPL management decisions for the deployment of their nuclear power plants. Based on my experience, a review of FPL's decisions leads me to conclude that the stepwise approach to licensing and project scheduling for the Turkey Point new units, and its decision to extend their target operation dates, is prudent and reasonable.

Roles and Responsibilities of the NRC

Q. What are the responsibilities and mission of the NRC?

A. The NRC was created as an independent agency by the Energy Reorganization Act of 1974, which abolished the Atomic Energy Commission (AEC) and transferred its regulatory functions to the NRC. The Atomic Energy Act of 1954, as amended, provides the foundation for regulating the nation's commercial nuclear power industry. The Act imposes on the NRC

the obligation to protect the public health and safety and to ensure that all civilian nuclear materials are used in a safe and proper manner. The NRC's 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. The NRC achieves its mission by imposing and regulating a series of safety objectives that enables the safe and secure use and management of radioactive materials and nuclear fuels for beneficial civilian purposes.

Q. What primary NRC activities are conducted to accomplish its safety objectives?

A. The NRC conducts multiple primary activities to accomplish its safety objectives, including: developing regulations and guidance related to the uses of nuclear materials; licensing or certifying applicants to use nuclear materials, operate nuclear facilities, and decommission facilities; inspecting and assessing licensee operations and facilities to ensure that licensees comply with NRC requirements and taking appropriate enforcement action when necessary; evaluating operational experience of licensed facilities, activities and events; conducting research, holding hearings, and obtaining independent reviews to support regulatory decisions; and conducting activities related to the common defense and security, specifically controlling access to nuclear materials and coordinating with international efforts to control the proliferation of nuclear materials.

Q. How is NRC's radiological safety oversight exercised?

A. The NRC sets the rules that users of radioactive materials must follow to prevent or minimize radiation exposure, with 10 CFR Part 20 as the primary set of standards and regulations. The NRC's regulations are intended to protect workers using radioactive materials and the general public from the potential hazards of radioactivity. In fact, radiological protection is the primary objective for achieving the NRC mission of protecting public health and safety. Therefore, NRC regulations are constantly reviewed and updated to improve radiological protection, including efforts to minimize exposure below regulatory standards. Changes to the regulations and new regulations are implemented using standard federal practices, based on recommendations from the NRC staff, industry organizations and academia, and interested members of the public to improve radiological protection for individuals and the public. The radiological protection record of workers and the public at nuclear power plants continues to surpass conservative regulatory requirements.

Q. Please explain how NRC licensing conditions are monitored at operating nuclear power plants.

A. An NRC license authorizes an applicant to operate a nuclear facility in accordance with very specific licensing conditions and referenced applicable regulations and standards. The license describes the approved conditions and technical basis the NRC relies on for the safety and security of the public, and therefore, the corresponding oversight to ensure compliance. The NRC

conducts inspections during construction to ensure the plant is being constructed as licensed, and during operations to ensure the plant is operated as licensed and with adequate protection of public health and safety, and the environment. Both routine and special inspections are conducted, using "resident" inspectors at each of the nuclear power plant and major industrial facilities and inspection teams from any one of four NRC regional offices. The objective of the inspection program during plant operation is to monitor performance in three key areas: (1) facility safety, achieved by avoiding accidents and reducing the consequences of accidents if they occur; (2) radiation safety for plant workers and the public, to avoid unnecessary radiation exposure during routine operations; and (3) safeguards, to protect plants against sabotage or other security threats. The NRC uses a risk-informed and performance-based approach for most of its monitoring programs. NRC inspections are focused on activities where the potential risks are greatest, and include a process for assessing licensee performance. The performance assessment uses objective measures in key areas referred to as the "cornerstones" of safety and security. The associated enforcement process provides a systematic way to respond to violations in a consistent and predictable manner, in accordance with the potential safety impact.

Q. Please explain how the NRC investigates allegations and ensures that licensees implement effective employee concerns programs.

A. The NRC conducts investigations of allegations of wrongdoing or intentional violation of the regulations or license requirements, and has established

practices to encourage concerned individuals to report potential safety or security issues, and a systematic process for evaluating allegations and investigation findings.

The NRC has a well-established and tested framework for protecting the rights of individuals to raise safety concerns without fear of retaliation. The 1974 Energy Reorganization Act that created the NRC included provisions for "whistleblower protection." The NRC subsequently extended the principles of "whistleblower" protection to a process for managing the "differing professional opinions" of the NRC staff and to establish a policy expectation for licensees to establish "employee concerns programs" to promote an environment that encourages individuals to raise safety concerns.

In 1989, the NRC published its ''Policy Statement on the Conduct of Nuclear Power Plant Operations" to clarify the NRC's expectations regarding personal commitment and accountability of all individuals engaged in any activity affecting the safety of nuclear power plants. In 1996, the NRC published a policy statement, ''Freedom of Employees in the Nuclear Industry to Raise Safety Concerns Without Fear of Retaliation," which sets forth its expectation that licensees and other employers subject to NRC authority will establish and maintain safety-conscious environments in which employees feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation. In November 2009, the NRC requested comments on a draft

safety culture policy statement, which reaffirms the importance of a working environment that promotes a questioning attitude without fear of retaliation and maintains a positive workplace safety culture. In the near future, after comments on the proposed policy have been gathered and evaluated, the NRC is expected to issue a new safety culture policy that enhances the commitment to a working environment and encourages individuals to raise safety and security concerns without fear of retaliation.

Q. How are public concerns addressed during the NRC licensing process?

A. The Atomic Energy Act of 1954 provides an opportunity for a hearing to any person whose interest may be affected by Commission proceedings on the granting, suspending, revoking or amending a reactor license. The NRC's regulations have established the process for conducting public hearings, in accordance with the federal administrative procedures. The NRC has established licensing boards, including appointed administrative judges, to implement the hearing process and establish a record for any subsequent litigation. The adjudicatory process is described in more detail below, under the discussion of the new reactor licensing process.

Statutory Responsibilities of the NRC

Q. Please describe the responsibilities of the NRC.

A. The NRC is the independent Government oversight agency with responsibilities for protection of public health and safety, the environment and

the common defense and security. It is empowered by the Atomic Energy Act with exclusive jurisdiction for nuclear safety. NRC's implementing regulations are contained in Title 10 of the Code of Federal Regulations (10 CFR).

Subsequent to the AEA, additional laws were enacted establishing the present NRC's statutory framework, and contributed to the establishment of the regulatory practices associated with the safe use of nuclear materials. These enacted laws are briefly summarized below.

- The Energy Reorganization Act of 1974 establishes the NRC as an independent agency responsible for the safety regulation of the civilian uses of nuclear materials. The Act of 1974 gave the NRC its collegial commission structure and established its major offices. A later amendment to the Act also provided protections for employees who raise nuclear safety concerns.
- The Nuclear Waste Policy Act of 1982 establishes the federal government's responsibility to provide for the permanent disposal of high-level radioactive waste and spent nuclear fuel, and the industry's responsibility to bear the costs of permanent disposal. Amendments to this Act have mostly focused on the efforts of DOE to develop a national repository at Yucca Mountain, Nevada. The resolution of spent fuel disposition and waste storage is now on hold and surely to be revised since the Executive Branch announced the termination of

the Yucca Mountain project and the formation of a Blue Ribbon Commission to make recommendations on "options for permanent disposal of spent fuel and/or high-level nuclear waste, including deep geologic disposal".

- The Low-Level Radioactive Waste Policy Amendments Act of 1985 gives the states the responsibility to dispose of low-level radioactive waste generated within their borders and allows the states to form compacts to locate facilities to serve a group of states. This Act provides that the low-level waste facilities will be regulated by the NRC or by States that have entered into Agreements with the NRC under section 274 of the Atomic Energy Act.
- The Uranium Mill Tailings Radiation Control Act of 1978 establishes programs for the stabilization and control of mill tailings at uranium or thorium sites, both active and inactive, in order to prevent or minimize, among other things, the diffusion of radon into the environment. Title II of the Act gives the NRC regulatory authority over mill tailing at sites under NRC licenses on or after January 1, 1978.
- The Nuclear Non-Proliferation Act of 1978 seeks to limit the spread of nuclear weapons by, among other things, establishing criteria governing U.S. nuclear exports licensed by the NRC and taking steps to strengthen the international safeguards system.
- The National Environmental Policy Act establishes that, for any major federal action that could significantly affect the quality of the

environment, a detailed environmental impact statement must be prepared describing the environmental impacts of, and possible alternatives to, the proposed action. This Act also provides that an environmental impact statement would accompany proposals involving major federal actions through the agency review process. This Act also establishes the Council on Environmental Quality, which issues regulations on the preparation of environmental impact statements and on public participation in the preparation of the statements.

- The Administrative Procedure Act (APA in 5 U.S.C. Chapters 5 through 8) is the fundamental law governing the processes of federal agencies. Its original focus was on rulemaking and adjudication. It requires, for example, that affected persons be given adequate notice of proposed rules and an opportunity to comment on the proposed rules, to be published in the Federal Register. This Act gives interested persons the right to petition an agency for the issuance, amendment, or repeal of a rule. It also provides standards for judicial review of agency actions. The APA has been amended often and now incorporates several other acts that cover a range of administrative processes, including the Freedom of Information Act. The Government in the Sunshine Act requires that collegial bodies such as the Commission hold their meetings in public, with certain exceptions for meetings on matters such as national security or personnel.

10 CFR Part 52 Reactor Licensing Framework

Q. Please describe the current NRC nuclear plant licensing structure.

A. It is appropriate to first review the prior regulatory framework to better understand the current licensing process. The original NRC licensing process for nuclear reactors, codified in section 189 of the AEA, was set forth with more specificity in Part 50 of Title 10 of the Code of Federal Regulations; it was used to license all power reactors presently operating in the United States. The main requirements for nuclear power plant regulation are, henceforth, established by Part 50 and the current licensing process and ensuing regulations are subjected to its implementation, with the notable exceptions of the issuance of a combined construction and operating license and other licensing improvements effected by Part 52.

The original Act imposed a two step licensing process on an applicant for an operating license, as regulated by Part 50. First, the applicant was required to obtain a construction permit. The construction permit application was a significant undertaking, requiring the preparation of a Preliminary Safety Analysis Report, demonstrating the reactor technology and site suitability, and preparation of an Environmental Report to satisfy the requirements of the National Environmental Policy Act (NEPA). Section 189 of the AEA then required the NRC to hold a mandatory hearing for all construction permit

applications, regardless of whether any interested party sought to contest the application. In the second step of the process, after securing the construction permit, the applicant was required to obtain an operating license to authorize plant operations, after construction was completed. To complicate matters, plant construction was started before the design was substantially completed and regulatory reviews of technical issues continued during construction. The operating license application was also a significant undertaking, the goal of which was to enable the NRC to make the findings required by the AEA and NEPA. The applicant was required to submit a Final Safety Analysis Report and an Environmental Report. Section 189 of the AEA requires the NRC to provide an additional hearing opportunity at the operating license stage. Numerous operating license proceedings were challenged at this stage, after significant investments were made and plant construction was substantially completed. Extensive delays became common and costly.

In 1989, the NRC adopted a streamlined, combined licensing process for nuclear power plants, embodied in Part 52 of the NRC regulations. It was codified in Section 185(b) of the AEA by the Energy Policy Act of 1992, to achieve straightforward objectives of plant standardization and financial risk minimization, with well-defined safety and environmental reviews as a backbone. Part 52 allows for a single license to be issued to an applicant, consisting of a combined construction permit and operating license, after fulfilling all pertinent safety requirements. In essence, the revised NRC

licensing process still contains the elements needed to make the necessary reviews and safety determinations, including public involvement, safety review, independent review by the Advisory Committee on Reactor Safeguards (ACRS), environmental review, public hearing and continued NRC oversight, in a more efficient and effective package. Part 52 strongly encourages the use of standard, pre-approved designs for new plant applications. It also provides the opportunity to request early approval of sites for nuclear plants, in advance of an application to construct and operate a nuclear power plant, and to reference a Certified Design that has complied with safety requirements and approved by an NRC Rulemaking.

Q. Please explain the advantages of the One-Step Part 52 Licensing.

A. The revised combined licensing using Part 52 shifts the burden of proof for COL applicants to the front end, deferring and therefore reducing financial and construction risks until the licensing review is favorably advanced. Part 52 is a brief yet powerful addition to the nuclear power plant regulations that should resolve many of the problems of the two-step Part 50 licensing. It consists of three separate and interacting components, as shown on Exhibit NJD-2, which can be used independently or jointly: the Early Site Permit, the Standard Design Certification and the Combined Operating License (COL). The most important is the COL because it is the only license that allows plant construction and operation. The Part 52 approach allows early resolution of safety and environmental issues. The issues resolved by the design certification rulemaking process and during the early site permit hearing

process are not reconsidered during the combined license review. However, the Part 52 licensing process allows for full public participation, so that the issues associated with the design and site can be resolved before construction begins.

Q. What are the benefits of using the Design Certification process for a COL?

A. The Standard Design Certification is a significant complement to the COL license. The benefits of referencing a certified standard design in the COL application is that plant design issues that were resolved by NRC in the design certification process are entitled to finality in the COL process. Therefore, a COL applicant that references a certified design reduces the scope and length of the safety review, minimizes risk and costs, and adds predictability to the process by placing the burden of reactor safety reviews on a rulemaking that is not subject to subsequent adjudication. Under Part 52, the NRC can certify a reactor design for 15 years through the rulemaking process, independent of a specific site. An application for a standard design certification must contain the technically relevant design information, a design-specific probabilistic risk assessment and proposed tests, inspections, analyses, and acceptance criteria (ITAAC) which are necessary and sufficient to provide reasonable assurance that the plant is built and will operate in accordance with the design certification. The issues that are resolved in a design certification rulemaking are subject to more restrictive change processes than issues that are resolved through the issuance of a license. Important certified design requirements can

only be changed by rulemaking, and the rule describes limited circumstances for other changes, maintaining the stability and standardization characteristics demanded of the Design Certification Rule (DCR).

Q. What are the key features of a COL license?

A. A combined license authorizes construction and conditional operation of a nuclear power plant. The application for a combined license must contain essentially the same information required in an application for an operating license issued under 10 CFR Part 50, including financial and antitrust information. The application must also describe the ITAAC that are necessary to ensure that the plant has been properly constructed and will operate safely. When the application references a standard design certification, the applicant must perform the ITAAC for the certified design and the site-specific design features.

The ACRS reviews each application for a combined license, together with the NRC staff's Safety Evaluation Report (SER), in a public meeting. After issuing a combined license, the NRC verifies that the licensee has completed the required ITAAC, and that the acceptance criteria have been met before the plant can operate. The NRC publishes notices of the successful completion of the ITAAC. At least 180 days before the scheduled initial fuel loading, the NRC publishes a notice providing an opportunity for members of the public to participate in a hearing conducted by the Atomic Safety and Licensing Board. The NRC considers a request for a hearing only if the request demonstrates

that the licensee has not met the acceptance criteria specified in the combined license.

Q. What is the status of FPL's Combined Operating License Application?

A. FPL submitted its COL Application for Turkey Point Units 6 and 7 on June 30, 2009, and it was docketed by the NRC on September 4, 2009. However, the NRC has, to date, not completed the analysis necessary to establish and publish the review schedule, which is expected by mid-2010. This is a delay of about 6 months beyond the average schedule for similar plants. The reasons for this delay are a combination of the new contractor mechanism that the NRC staff will use for the review of the Turkey Point COLA, and the agency's priorities and competing resource needs for the lead projects. The NRC estimated schedule for a typical COLA review is approximately 30 months and 12 months for the final mandatory hearing, for a total of 42 months for the process leading to a COL. Presently, variations to this estimate are occurring due to differences in the applications, complexities brought out by additional safety reviews or site characteristics, relative placement of applicants in the NRC staff review schedules and the corresponding staff allocations. The NRC often refers to these issues as a reason for extending their review schedules beyond what they had originally estimated for the first batch of COLAs. If the estimated schedule is used, Units 6 and 7 COLA review and adjudication should be completed by late fall 2013 or in early 2014. It is important to note that the NRC is reviewing COL applications based on the reactor technology cited in the application, and is using a

"Design-Centered Review Approach" to expedite review and approval of already reviewed identical parts of an application. The Design-Centered Review Approach is a new regulatory mechanism for effective and efficient review of standard reactors and standardized applications. The approach is simple: instead of every application undergoing a custom, separate review by an assigned team, the lead application is selected as a Reference COL (R-COL) and subsequent "identical" applications as surrogates. All issues reviewed and resolved for the R-COL are considered resolved for all subsequent applications that conform to the same requirements; one expert NRC staff team is formed to review each R-COLA and the subsequent "identical" COLAs. Only the site specific information, including environmental features, water usage, electrical grid requirements, and others, are reviewed individually. There are efficiencies to be gained in the timely and cost-efficient reviews using this method by both the NRC and the industry. The Turkey Point COL application cited the AP1000 reactor technology and its associated design certification, and used the TVA Bellefonte Nuclear Station COLA as the reference plant. Based on the progression of the reviews of all of the AP1000 COLs, the reference plant for the AP1000 is now the Vogtle COLA submitted by Southern Nuclear Operating Company. The Turkey Point COL is therefore depending on the progress of these proceedings.

Generation III+ Reactors and AP1000 Design Certification Status

Q. What are Generation III+ reactors and what are their advantages?

A. Generation III reactors were the first generation of advanced nuclear reactors with standardized designs to be considered under the new NRC licensing regulations (Part 52) in the 1990s. They were light water reactors with significant evolutionary improvements over the types of reactors in service today. The next generation of nuclear power plants is called Generation III+ reactors, which offer additional improvements over Generation III reactors in the areas of safety, state-of–the-art advances in Instrumentation and Controls, materials, technology and construction techniques, economics and operational simplicity. Shown on Exhibit NJD-4, is a graphic representation of the evolution of nuclear power plant technology as a function of time, beginning with the first demonstration commercial reactors, employing Generation I technology.

The design enhancements for Generation III+ reactors were focused on increased plant safety, ensuring improvements to core cooling, containment integrity, and the capability to prevent or mitigate the consequences of accidents which could result in potentially hazardous offsite radiation doses. There was a definite emphasis in simplification, standardization and the use of inherent safety features to carry out the intended safety functions. The bottom

line objective was clear: new reactors were to be measurably safer, simpler, more independent of operator actions, and easier to operate and maintain. A new measuring stick employing probabilistic risk assessments was used to establish the safety case, supported by better documented operational experience and models. What was sought, and eventually built into the Generation III+ advanced designs, was one to two orders of magnitude improvement in the key risk factors, relative to present reactors. The designs were to be standardized to secure the safety gains and the reliability and economic advantages.

The AP1000 Nuclear Power Plant, the reactor selected by FPL for Turkey Point 6 & 7, is a Generation III+ reactor with passive safety features; it was issued a Final Design Certification Rule on 2006 and an Amendment to update to a more comprehensive Design Certification (DC) is currently under review. Two AP1000s are under construction in China and the technology has been selected by seven US utilities for deployment as base-load units. This passive reactor design relies on redundant safety systems using inherent or passive means to maintain core cooling and integrity, without active injection of coolant by pumps, for the dominant spectrum of postulated accident conditions. The AP1000 design leads to a significant reduction of pipes, pumps, valves and cables, and therefore, to simplicity in operation and maintenance.

In summary, the AP1000 reactor attributes include: passive safety with no active control or operator intervention needed to avoid accidents; low accident probability (less than one core damage event for 1 million years of operation); modular design and construction for fewer components, less materials and less welding; improved fuel design for higher fuel burnup; standardized certified design to expedite licensing and reduce capital cost; aircraft crash resistance; higher availability and operating life of 60 years or more and better load-following capability. It presently appears to be a best reactor technology and overall leading nuclear power plant for FPL's time frame and economical considerations.

Q. What is the status and significance of the AP1000 design certification?

A. On January 27, 2006, the NRC issued the original DCR for the AP1000 design in the Federal Register (71 FR 4464). While there was enough information provided for the NRC to make a safety determination, there were several important design issues that were not completed or needed upgrades to the 2006 AP1000 design certification, including a more comprehensive seismic safety analysis, updated Instrumentation and Control, Control Room Habitability, redesigned fuel racks and improved fuel design.

On September 22, 2008, Westinghouse made an update to its application to amend the original AP1000 Design Control Document (DCD). The update, Revision 17, contains changes from those submitted in May, 2007, under Revision 16. Revision 17 is referenced in the FPL COLA. Also,

improvements for aircraft impact resistance and Shield Building Designs were included in the Amendment. Following the NRC receipt of Part 2 of the revised Westinghouse Shield Building Design scheduled for April 30, 2010, the staff will assess the impact on both the AP1000 design certification amendment review and the associated Combined License applications. As shown on Exhibit NJD-3, the current NRC published schedule expects the AP1000 DC rulemaking to be issued approximately by September 2011.

It is important to note again the significance of this complete design certification rulemaking for the licensing of COLAs referencing the AP1000, and especially so for the lead applications, like Southern Nuclear's Vogtle and South Carolina Electric and Gas Company's Summer plant. Since the DC is cited in the COLA applications for the leading reactor projects, the final or mandatory adjudication proceedings for the COL license cannot be conducted until the DCR is finalized. Therefore, the expected issuance of the final DCR design for the AP1000 is one of the major considerations in the deliberate process that FPL is conducting for Turkey Point 6 & 7 licensing, including the fact that FPL will be using NRC's Design-Centered Review Approach to obtain schedule, costs and predictability improvements. Under this approach, all issues reviewed for the Reference COL are considered resolved for all subsequent applications that conform to the same requirements.

Spent Fuel Disposition and Waste Confidence Decision

Q. Please summarize the present status of the US commercial reactors spent fuel disposition program.

A. The United States Government has not fulfilled its statutory requirement to establish a permanent geologic repository for commercial reactors spent fuel or high level radioactive wastes from defense related operations and others. Furthermore, DOE has announced that it seeks to terminate with prejudice the application to the NRC for a license to construct and operate a geologic repository at the Yucca Mountain Site, Nevada. The Executive Branch has now filed with Congress, on March 1, 2010, an Advisory Committee Charter that sets the objectives and scope of activities for the "Blue Ribbon Commission on America's Nuclear Future". The stated purpose is "to conduct a comprehensive review of the policies for managing the back end of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense spent nuclear fuel, high-level waste, and materials derived from nuclear activities." The Blue Ribbon Commission is to provide advice, evaluate alternatives, and make recommendations on a variety of issues, including "options for permanent disposal of spent fuel and/or high-level nuclear waste, including deep geologic disposal." A draft report is due within 18 months and a final report within 24 months.

A factual review of the above occurrences, and of the history and realities of spent fuel disposition, reveals the long running political uncertainty as well as the bottom line: the U.S. will deal with spent fuel and high level wastes in a manner that protects public health and safety, the environment and the common defense and security, and it will eventually be done. Spent nuclear fuels are safely and securely stored on-site or off-site storage pools or dry casks, and safely transported as needed. Nevertheless, a comprehensive policy to the disposition of commercial spent fuel is needed sooner rather than later to provide requisite predictability to this long-standing issue, and it should be made a national priority.

Q. How is the Waste Confidence Decision affected by the termination of Yucca Mountain?

A. The NRC Commissioners have been debating an update or changes to the Waste Confidence Decision for the last year. Undoubtedly, the deliberations and decision-making have been affected by the perceived and now proposed termination to the Yucca Mountain license application, and by other major political activities. It is apparent that the pending Waste Confidence Decision is to be subjected to the review of the present full (5 Commissioners) Commission that would take into account the potential for longer term approaches to management, storage, and disposal of high-level radioactive waste and spent nuclear fuel. I believe that the Commission decision would actually strengthen the present regulatory framework established at 10 CFR 51.23 and would contribute to a more stable structure for complete and

permanent resolution to the disposition of commercial nuclear spent fuels. I am convinced that the licensing, construction and operation of Turkey Point units 6 & 7 will not be affected by the resolution of the Waste Confidence Decision.

FPL's Project Management Approach to Turkey Point 6 & 7

Q. Has a national policy related to risk minimization for nuclear projects been articulated?

A. Yes. The 1992 Energy Act contained three implied strategies to minimize financial and regulatory risk: 1) licensing decisions are to be finalized before major construction begins; 2) utilities would order plants after regulatory/financial risks are mitigated by satisfactory COL progress; and 3) limited site work (under a Limited Work Authorization) could begin prior to COL issuance when warranted by effective project management.

Q. Is the Turkey Point licensing approach consistent with the risk minimization and standardization purposes of the 1992 Energy Act?

A. Yes. In fact, FPL's recognition of the need to achieve a higher degree of predictability in regulatory review schedules and outcomes, as well as commercial issues affecting deployment of the new nuclear projects is entirely consistent with the strategies identified in the 1992 Energy Act. FPL has consistently made project management decisions in accordance with the law and these intended purposes. For example, FPL made conscious decisions to

defer certain long lead procurement decisions and has not entered into an Engineering, Procurement and Construction contract for the project. By choosing to reserve these expenditures until a later time, FPL will be able to make these decisions with more complete and mature information in the future. This naturally has an effect on the projected in-service dates. I believe the Turkey Point project management has been taking the enabling steps necessary to maintain a project schedule and cost capable of delivering reliable, cost-effective and fuel diverse generation to FPL customers.

Q: Are FPL's decisions and approach consistent with best management practices for Generation III+ nuclear power projects?

Yes. I agree with FPL that the primary focus of the current stage of the project should be to obtain the necessary federal, state and local approvals for construction and operation of the Turkey Point 6 & 7 project. Our country has experienced financial turmoil, multiple major proposed national energy policy changes, electrical demand reduction and fluctuations in the predicted cost of new nuclear generation and natural gas. The licensing of the lead nuclear power plants will serve as learning opportunities for the Turkey Point 6 & 7 project as those other projects progress. These developments, combined with the need for predictable and cost-effective detailed engineering, procurement and construction arrangements, lead me to conclude that FPL's stepwise approach to managing the Turkey Point Project is both prudent and reasonable.

Q. Does this conclude your direct testimony?

A. Yes.

Summary Resume Of Nils J. Diaz, PhD

Dr. Nils J. Diaz is the Managing Director of The ND2 Group, an expert and policy advisor group with a strong focus on the national and international nuclear power development and deployment arena, including new and existing plant licensing, regulatory, financial, policy and communications issues. The ND2 Group is presently or was recently engaged by a major nuclear reactor vendor, an Architect/Engineering firm, two nuclear utilities, two international engineering/ consulting firm, and the Department of Energy. He also provides developmental policy advice to three countries and to OECD's Nuclear Energy Agency. He presently serves as a Commissioner, Florida Energy and Climate Commission.

Nils Diaz is a past Chairman of the U.S. Nuclear Regulatory Commission (NRC). Dr. Diaz was designated Chairman of the NRC by President Bush on April 1, 2003 and he served as such until his retirement from government service on June 30, 2006. As Chairman of the NRC, Dr. Diaz served as the principal executive officer of and the official spokesman for the NRC, and had ultimate authority for all NRC functions pertaining to an emergency involving an NRC license; he was directly responsible for all high level interactions with the US Executive Branch and the Congress, as well as the international relationships and the policy development under NRC's charter. Dr. Diaz was first nominated by President Clinton and confirmed by the Senate as a Commissioner with the NRC in August 1996, nominated by President Bush and confirmed by the US Senate again in 2001, and exercised the responsibilities of the position until he assumed the Chairmanship of the Commission.

Prior to his appointment to the NRC, Dr. Diaz was the Director (1985-1996) of a national consortium for advanced nuclear power and propulsion (INSPI) for the Ballistic Missile Defense Organization (BMDO), Department of Defense, and Professor of Nuclear Engineering Sciences at the University of Florida (1969-1996). As Director for BMDO, he exercised prime contractor management and Lead Scientist responsibilities for a diverse group of industries (including Aeroject, Boeing, Pratt& Whitney, Hughes Electronics, Rocketdyne and SRI), several national laboratories (including Los Alamos NL, Sandia NL, and Lawrence Livermore NL) and seven major universities, under contracts with the Department of Defense, the Defense Nuclear Agency, the Department of Energy and NASA. From 1969 to 1996, Dr. Diaz held senior positions at universities, Boards and industry, and consulted for the U.S. Government and other governments on civilian nuclear energy development. He also owned six small corporations serving the nuclear industry and government during that period and spent six years at nuclear utilities and reactor vendors, often

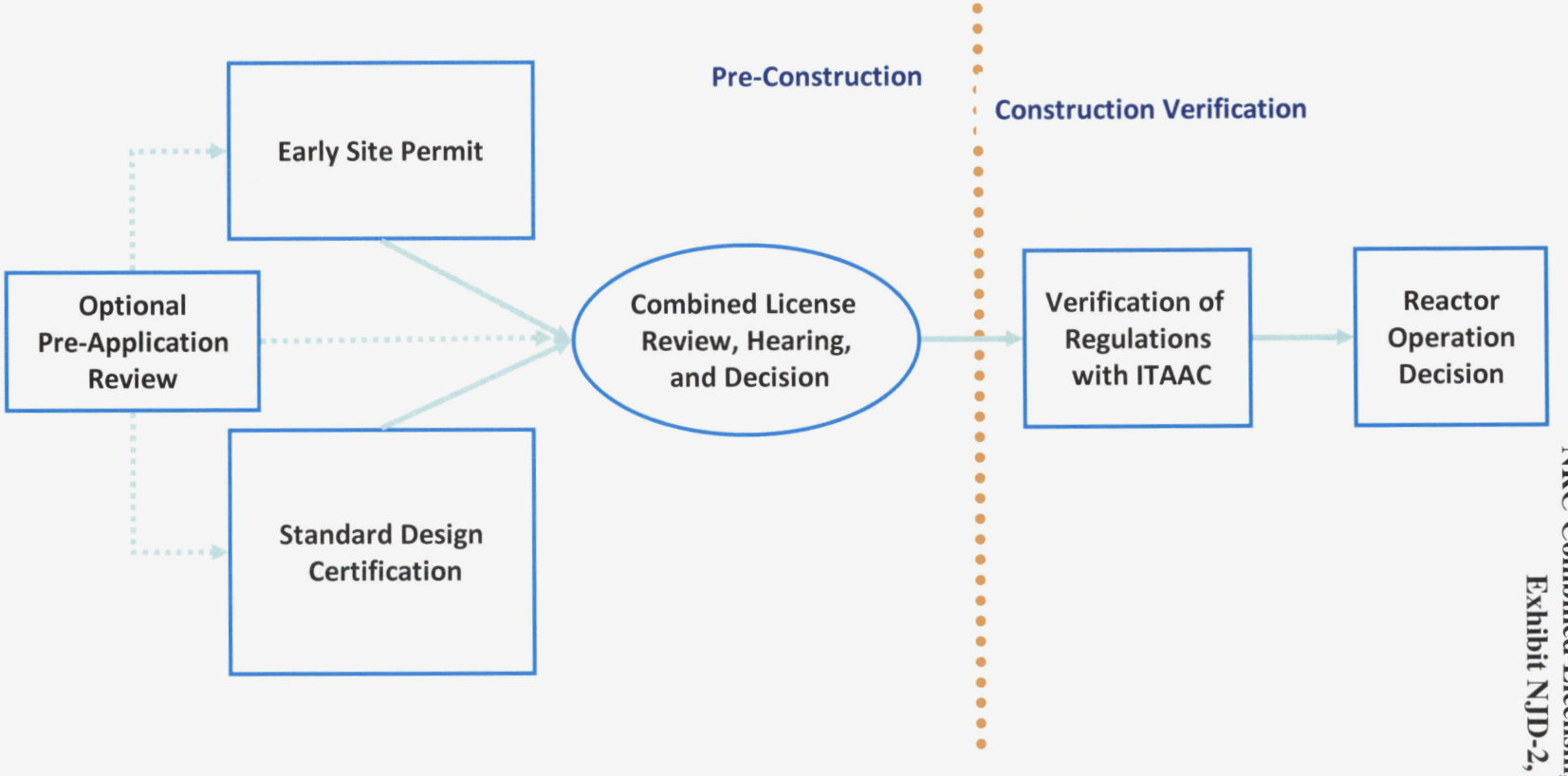
troubleshooting technical and management performance issues. He lived in Europe in 1981-1982, while serving as Principal Advisor to Spain's Consejo de Seguridad Nuclear, and consulting for other nuclear industries in other European countries. Dr. Diaz is internationally recognized for his broad expertise and contributions to nuclear sciences, reactor systems and fuels, to the regulation of nuclear facilities and radioactive materials, and to nuclear policy analysis and development. He has worked extensively in the international arena, including interacting and contributing to major policy, fora and decision-making efforts.

Dr. Diaz has published over 70 refereed technical articles and has participated in more than 200 international forums on nuclear energy, sciences and technology. He has been recognized worldwide for his statesmanship on nuclear affairs, including chairing the G8Nuclear Summit in Russia and leading the US Delegation to the International Atomic Energy Agency General Conference in 2005.He has received many national and international awards, including the Henry DeWolf Smyth 2008 Nuclear Statesman Award, awarded by the Nuclear Energy Institute, representing the nuclear industry, and by the American Nuclear Society. Dr. Diaz has been elected a Member of the Hispanic Hall of Fame and recognized as one of the top 50 Hispanics in Sciences and Engineering, and was named the National Hispanic Scientist of the Year for 2009.

Dr. Diaz holds a Ph.D. and M.S. in Nuclear Engineering Sciences from the University of Florida, and a B.S. Degree in Mechanical Engineering from the University of Villanova, Havana. He was licensed as a Senior Reactor Operator by the NRC and has formal training and practice in health physics, radiological sciences and nuclear medicine. He is a Fellow of the American Nuclear Society, the American Society of Mechanical Engineers, and the American Association for the Advancement of Sciences.

April 2010

NRC Combined Licensing Processes

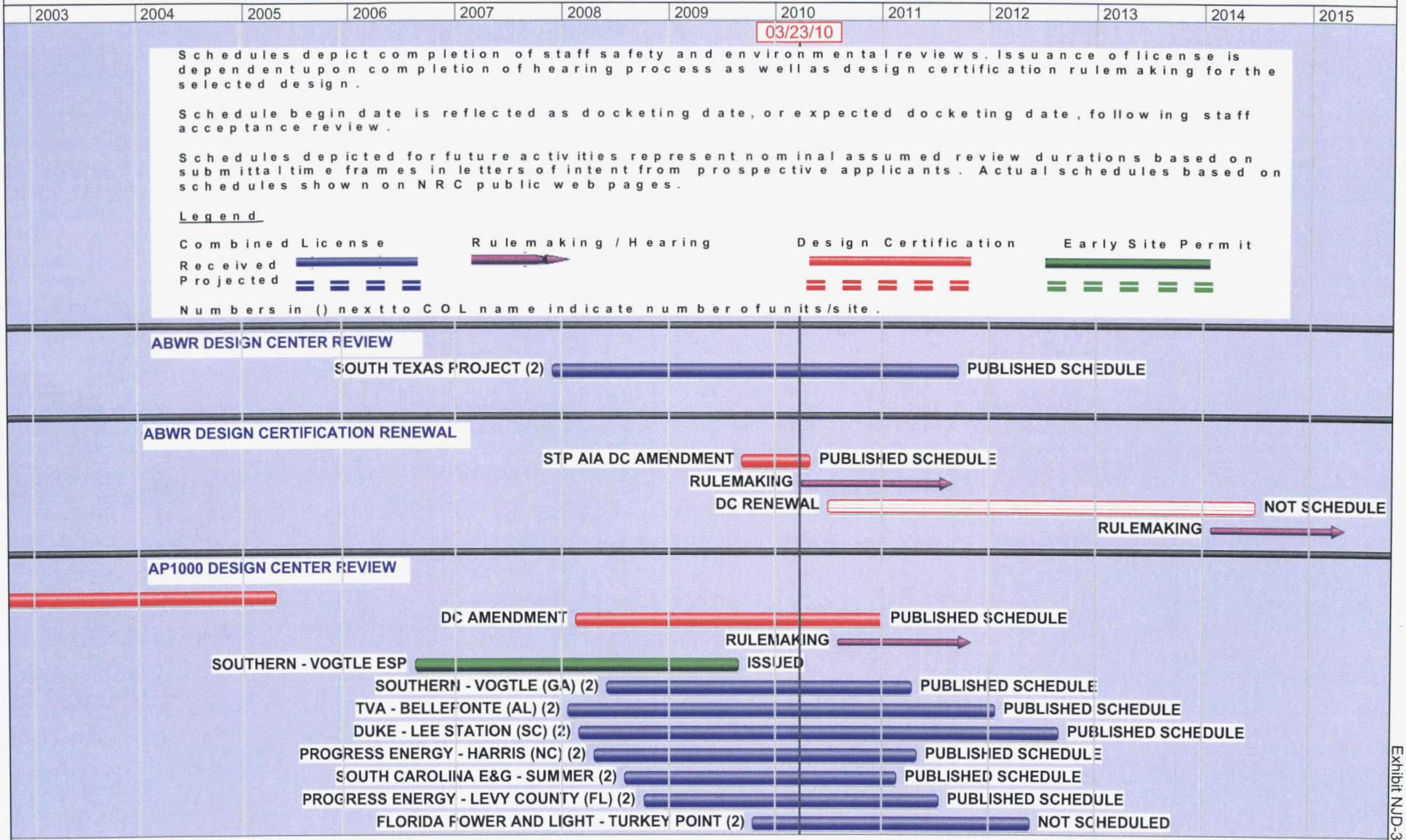


Source: USNRC

Docket No. 100009-EI
NRC Combined Licensing Processes
Exhibit NJD-2, Page 1 of 1

New Reactor Licensing Applications

Schedules by Calendar Year



Source: United States NRC

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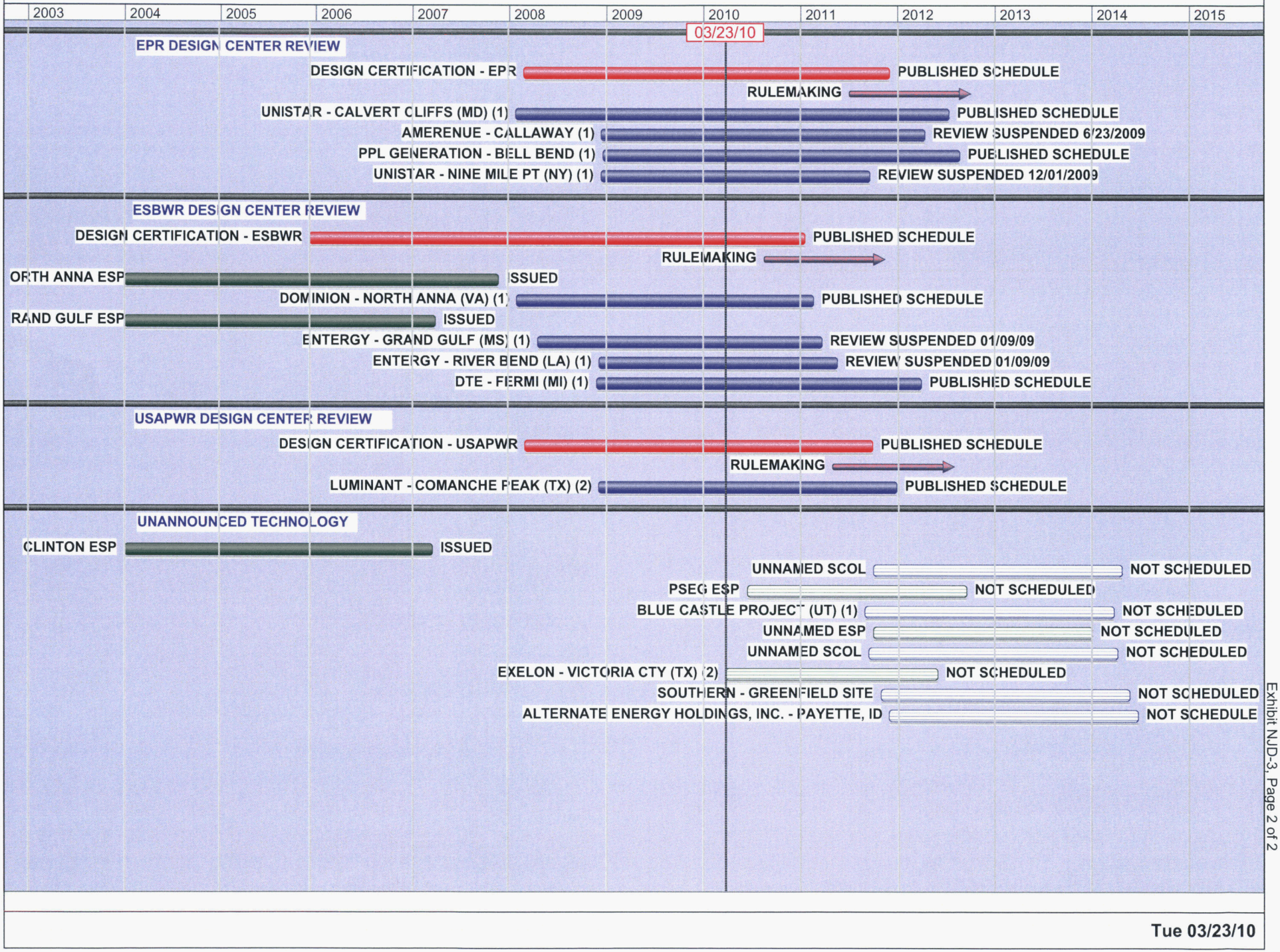
Docket No. 100009-EI
New Reactor Licensing Applications
Exhibit NJD-3, Page 1 of 2

New Reactor Licensing Applications

Schedules by Calendar Year



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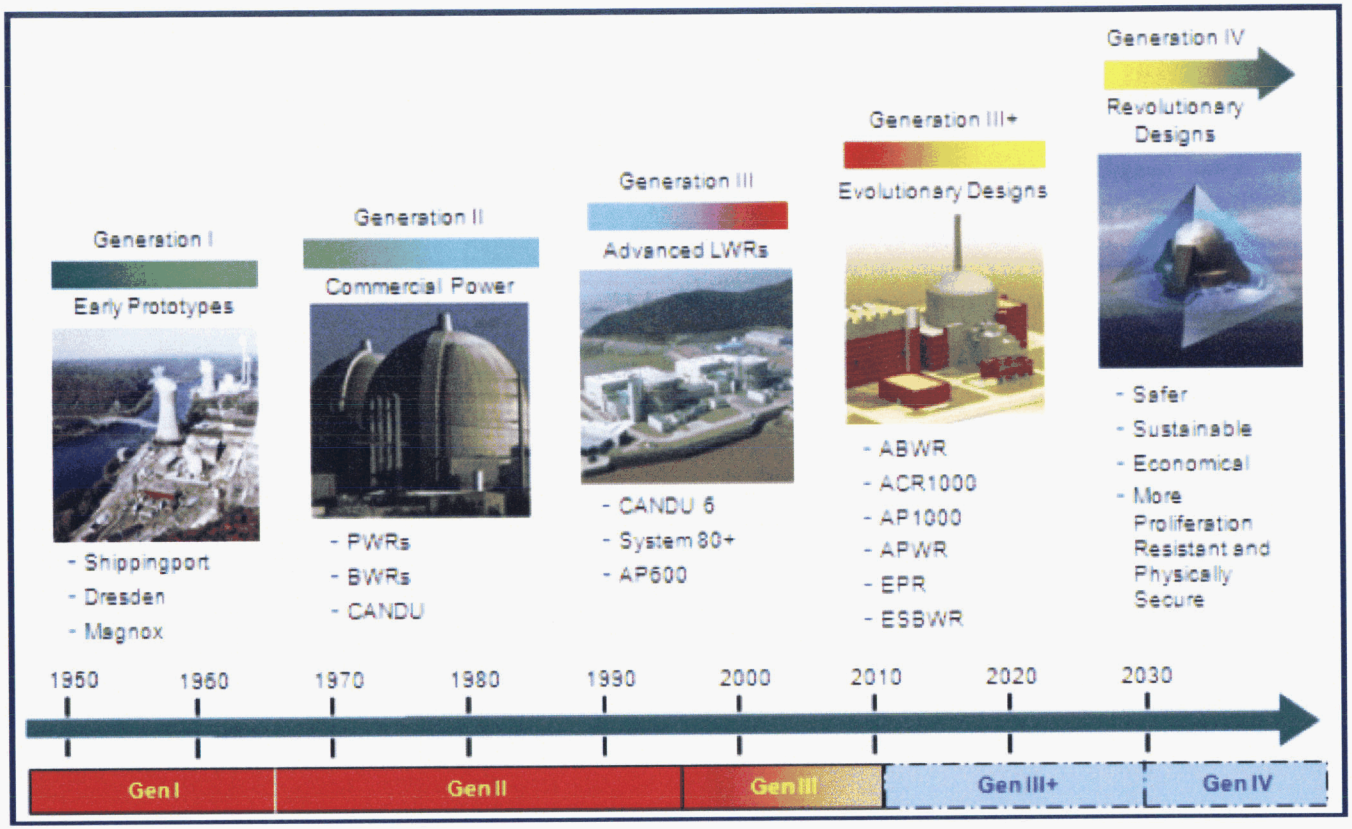
Nuclear Power Plant Technology Evolution



Source of slide: DOE (http://nuclear.energy.gov/genIV/neGenIV1.html)

Docket No. 100009-EI
Nuclear Power Plant Technology Evolution
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