

# NRG Energy's Path to Nuclear Development Leadership



Nuclear Innovation North America LLC

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# Safe Harbor Statement



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This Investor Presentation contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements are subject to certain risks, uncertainties and assumptions and typically can be identified by the use of words such as “expect,” “estimate,” “should,” “anticipate,” “forecast,” “plan,” “guidance,” “believe” and similar terms. Such forward-looking statements include our expectations regarding Nuclear Innovation North America LLC and its nuclear development strategy. Although NRG believes that its expectations are reasonable, it can give no assurance that these expectations will prove to have been correct, and actual results may vary materially. Factors that could cause actual results to differ materially from those contemplated above include, among others, general economic conditions, hazards customary in the power industry, weather conditions, competition in wholesale power markets, the volatility of energy and fuel prices, failure of customers to perform under contracts, changes in the wholesale power markets, changes in government regulation of markets and of environmental emissions, the condition of capital markets generally, and our ability to access capital markets.

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# NRG and Toshiba A Powerful Partnership



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## Development Capability

- ✓ Licensing Expertise
- ✓ Financing Expertise
- ✓ Partnering and Offtake Relationships
- ✓ Continued Funding of Development Efforts
- ✓ Additional Opportunities
- ✓ Existing Development Program



## TOSHIBA

### EPC Capability

- ✓ 40 Years of BWR Construction Experience
- ✓ Committed Capital
- ✓ Existing Manufacturing Supply Chain
- ✓ Modularized Design Engineering and Construction
- ✓ Positive Subcontractor Relationships

**Bringing innovation and leadership to nuclear generation**

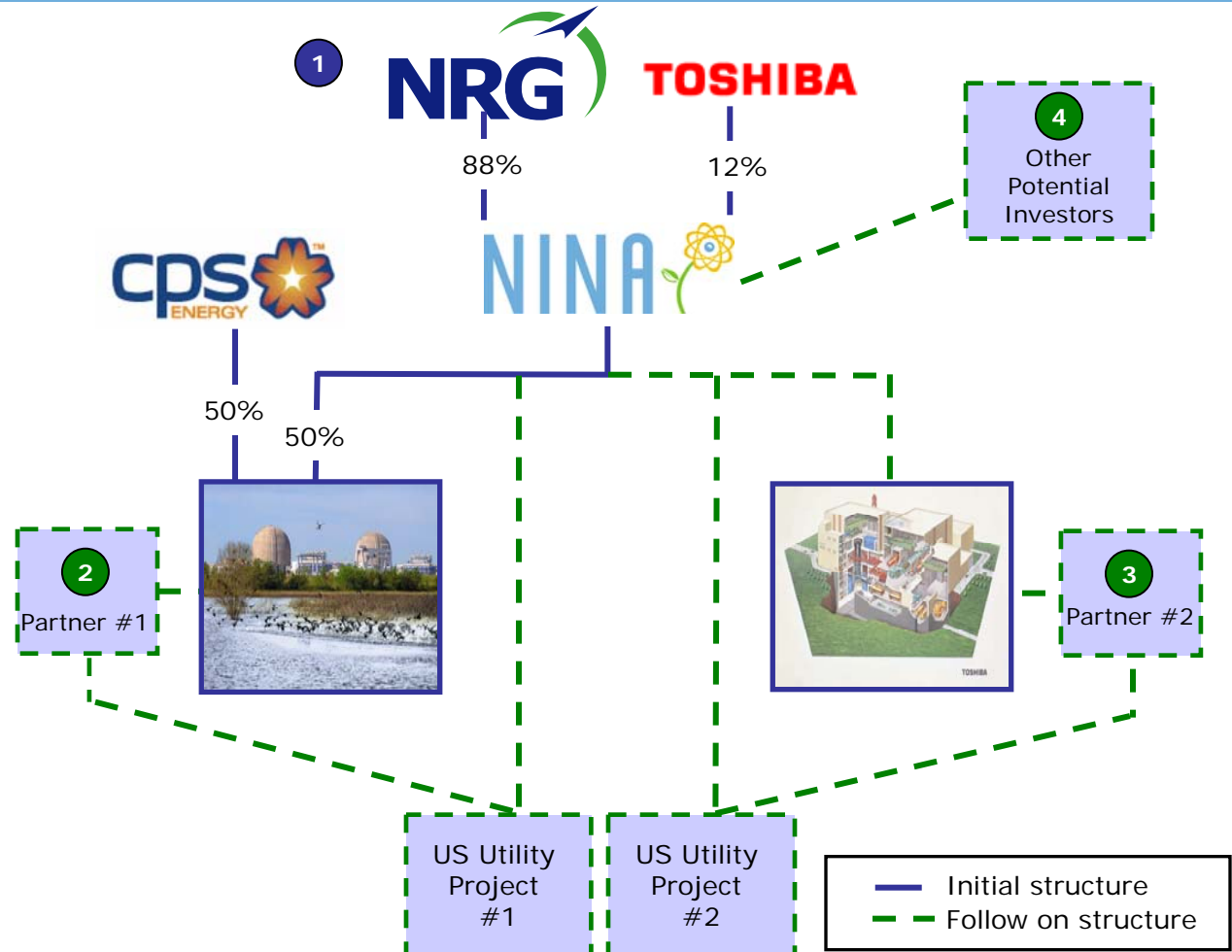
# NINA's Multi-Unit ABWR Strategic Step Structure



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## Long Term Strategy

- 1 NRG contributes its STP 3&4 interest and development rights and Toshiba contributes \$50 million cash upon NINA closing with an additional 5 annual installments, totaling \$300 million
- 2 Leverage assets, Toshiba EPC contract terms and expertise of NINA into a participation interest for other ABWR projects
- 3 NINA to pursue additional 2 unit nuclear site developments
- 4 Additional third party investors can be added to fund cash requirements



Note: the current ownership of STP 1&2 (44% NRG, 40% San Antonio and 16% Austin) remains unaffected by the development of STP 3&4 and the creation of Nuclear Innovation North America.

**A risk mitigated approach to developing the next generation of nuclear**

# Nuclear Development Risks



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Risk...

...Mitigation

## ***Traditional Development Risks***

Cost	➤ Pre-negotiated EPC terms and transparent pricing
Manufacture	➤ Existing pipeline for components, with capacity to handle our units
Construction	➤ Committed vendor with financial investment in project success ➤ Built on budget and in 39 months or less each time
Operation	➤ Technical sharing arrangement with Tokyo Electric Power ➤ 12 Year operating history
Power Sales	➤ MOUs for 80% of NINA share of output with Single A or better counterparties

## ***Nuclear Specific Development Risks***

Design/FOAKE	➤ Fully engineered, built four times, twice by Toshiba
Licensing	➤ Previously certified design ➤ Some modifications to improve operation

**NINA's business model provides enhanced certainty**

# STP Project Differentiators



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Risk	STP 3&4	Comments
EPC Contract	✓	<ul style="list-style-type: none"> <li>EPC Contract similar to large fossil turn-key projects</li> </ul>
Previous Construction History	✓	<ul style="list-style-type: none"> <li>Built four times on-time and on-budget in Japan</li> <li>Toshiba, STP 3&amp;4's EPC contractor, has been involved in most of the ABWR construction in Japan</li> <li>Quantities are known and the units are highly modularized</li> </ul>
Previous Operating History	✓	<ul style="list-style-type: none"> <li>12 years of operating history in Japan</li> <li>Exceptional track record and high capacity factors</li> </ul>
Multiple Funding Sources	✓	<ul style="list-style-type: none"> <li>Potential for JBIC and NEXI support for STP 3&amp;4</li> <li>Highly competitive for DOE Loan Guarantee</li> </ul>
Certified Design	✓	<ul style="list-style-type: none"> <li>ABWR previously certified in 1997</li> <li>Most of ABWR drawings are complete</li> </ul>
Existing Supply Chain	✓	<ul style="list-style-type: none"> <li>Toshiba has existing, latent, ABWR capacity</li> <li>Existing component and spare parts supply chain that has developed to service these plants</li> </ul>
Aligned Vendors	✓	<ul style="list-style-type: none"> <li>Toshiba is the prime EPC contractor and part owner of NINA</li> </ul>

**NINA's choice of a proven technology along with Toshiba partnership allows for a contractual structure that mitigates primary risks...**

# STP Project Differentiators *(continued)*



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Risk	STP 3&4	Comments
Existing Transportation & Construction Infrastructure	✓	<ul style="list-style-type: none"> <li>STP 3&amp;4 site was designed for four operating units with plenty of laydown space</li> <li>Existing barge slip that supports ultra-large modules and RPV units</li> <li>Existing heavy haul road and rail spur</li> </ul>
High Quality Offtake	✓	<ul style="list-style-type: none"> <li>MOUs with multiple counterparties for PPAs for STP 3&amp;4 offtake</li> <li>CPS is investment grade municipal utility expected to take 40%</li> </ul>
Highly Quality Nuclear Operator	✓	<ul style="list-style-type: none"> <li>STPNOC is highly rated and respected operator in the nuclear industry</li> <li>Only operator in history to have 2 breaker to breaker runs in a row for both operating unit</li> </ul>
Adequate Water Supply Contracts	✓	<ul style="list-style-type: none"> <li>STP site has existing water permits with the Lower Colorado River Authority that will be sufficient to operate 4 units at the STP site</li> </ul>
Existing Cooling Facilities	✓	<ul style="list-style-type: none"> <li>STP site has a 7,000 acre, above ground cooling reservoir that was designed to accommodate 4 operating units</li> </ul>
Community Support	✓	<ul style="list-style-type: none"> <li>Matagorda County is highly supportive of the STP expansion plans</li> <li>Letters of support from every level of the Texas government</li> </ul>
Existing Transmission	✓	<ul style="list-style-type: none"> <li>STP is already an operating plant with transmission lines connected</li> <li>Transmission lines are highly incentivized in ERCOT, and built by transmission companies</li> </ul>

**...While ideal brownfield site and market location further enhance project economics**

# Cost Certainties



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- Significant risk mitigation by selecting ABWR technology which has been built four times
  - ✓ Provides history of full engineering and nearly all quantities required for construction are known
- Primary open risk for our activities is the difference between U.S and Japanese labor productivity
- NRG will have a closed book, fixed price contract at financial closing, at which point escalation risk will cease
- Similarly, NRG intends to hedge its foreign exchange exposure as it makes its financial commitments

Relative Cost Comparison	ABWR Cost (\$/kw)		Other Developer (\$/kw)
<b>Base Cost (including G&amp;A, Fee and Contingency)</b>			
U.S. Sourced Quantities	\$470		
Foreign Sourced Quantities	\$770		
Site and Structural Improvements	\$340		
Labor	\$1,320		
<b>Total EPC Cost</b>	<b>\$2,900</b>		<b>\$3,013</b>
Owner's Cost (Excluding IDC)	\$300		\$592
<b>Total Cost Excluding IDC</b>	<b>\$3,200</b>		<b>\$3,605</b>
Transmission Cost	\$0		\$220
<b>Total Cost Including Transmission</b>	<b>\$3,200</b>		<b>\$3,825</b>
<b>Risks</b>	<b>Low</b>	<b>High</b>	
Cost Escalation Provided by FPL (through 2020)			\$2,680
Potential Cost Variance for NRG <sup>1</sup>	(\$335)	\$470	
<b>Price Range (before IDC)</b>	<b>\$2,865</b>	<b>\$3,670</b>	<b>\$6,505</b>

Source: NRG estimates and Nucleonics Week dated 2/21/08

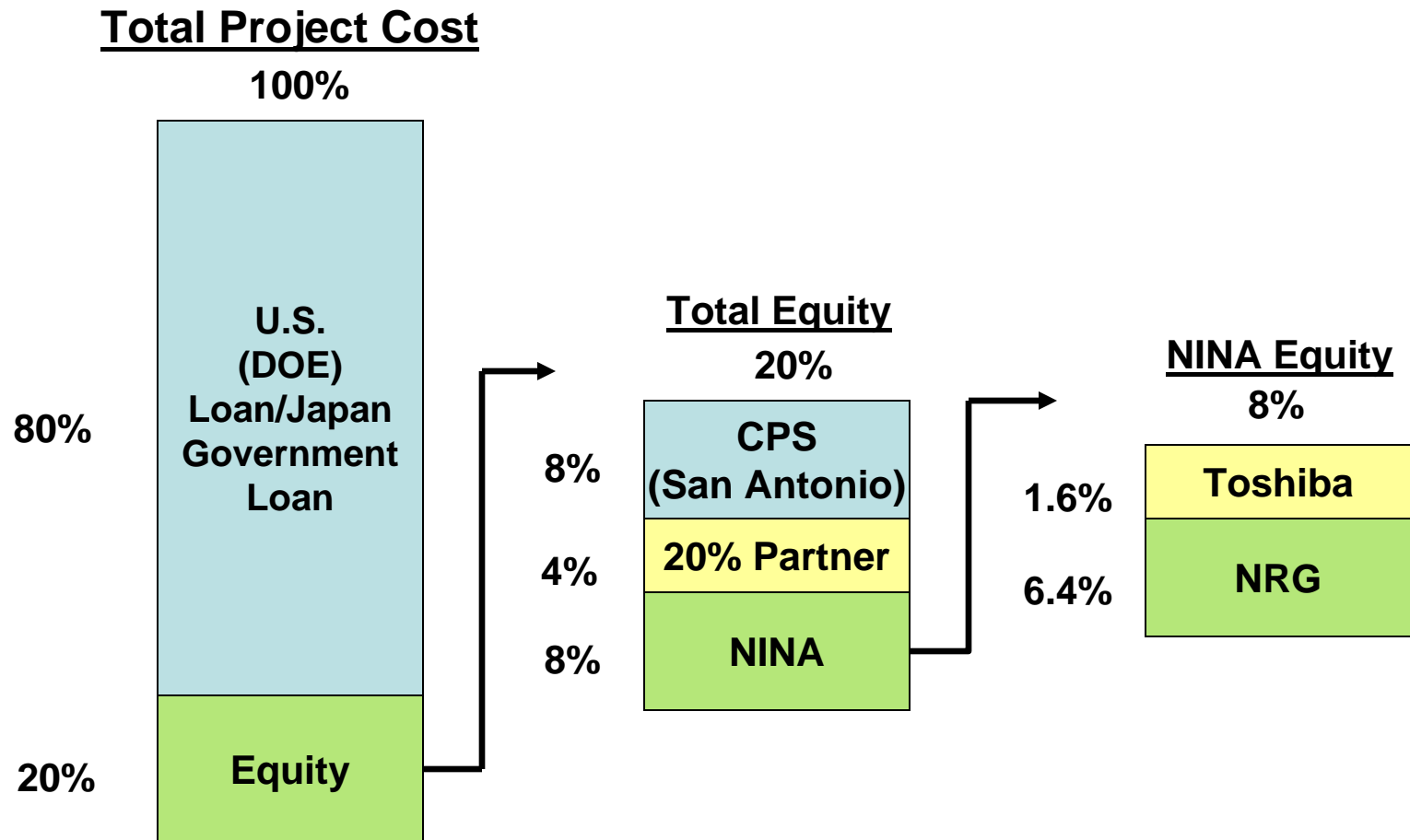
<sup>1</sup> Variance includes labor productivity, material price escalation until finance close and foreign exchange currency risk until hedged

**NRG's choice of ABWR, with a fixed price contract, creates significantly more price certainty than other developers**

# Limiting Impact on NRG Balance Sheet



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Manageable within existing capital allocation program

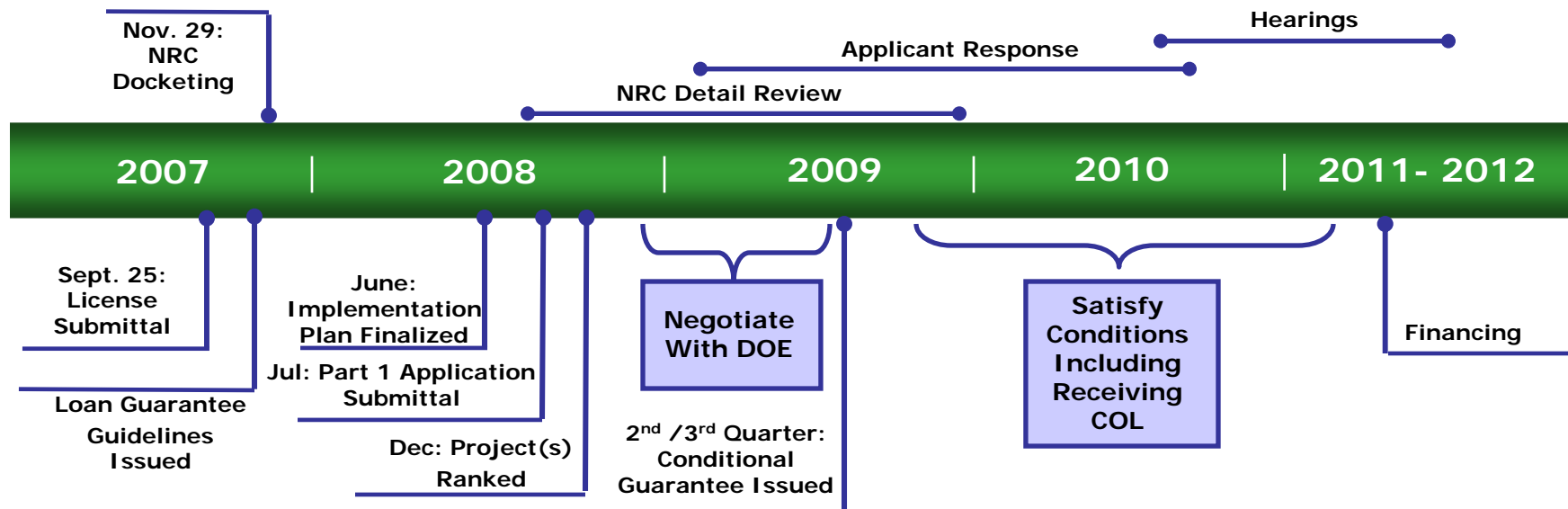


# Financing Timeline



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## Anticipated Timeline and Process for Loan Guarantees



- DOE is expected to issue loan solicitation shortly in two parts:
  - First Phase: Preliminary application leading to a project ranking
  - Second Phase: Full application from highly ranked projects
- Finalization of Conditional Commitments likely to extend into next administration

**NINA is well positioned for Loan Guarantee participation**

# STP Development Accomplishments to Date



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## 2007 -2008 Accomplishments

- ✓ Completed first application for a new operating nuclear unit to be received by the NRC in over 29 years
- ✓ Submitted amendments in September 2008 to pursue Toshiba-only application
- ✓ Offtake MOUs for nearly 80% of net Nuclear Innovation North America 40% ownership in STP 3&4
- ✓ Finalized master EPC terms that are consistent with project finance market requirements
- ✓ Developed a valuable supplement to the U.S. loan guarantee program through access to loans from Japan
- ✓ Completed part 1 and part 2 of the U.S. loan guarantee application
- ✓ Negotiated agreement with CPS Energy
- ✓ Executed Participation Agreement with STP 1&2 owners which permits use of Common Station Facilities for additional units on site
- ✓ Texas legislature acts to support nuclear development



**NRG has gained First Mover Advantage with STP site**



# STP Development: Continue to mitigate risk and advance the project



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## 6 to 18 Month Objectives

- DOE to announce project prioritization for loan guarantees
- NRC procedural schedule issued for STP 3&4
- Execute 20% STP sell-down
- Begin and finalize negotiation of conditional loan guarantee documentation
  - Department of Energy Loan Guarantee Program
  - Japanese Governmental Overseas Investment Loan Program
- Convert PPA MOUs to binding conditional PPAs
- Additional strategic NINA equity investor
- Announce second ABWR site



**A Solid Path To Realizing Shareholder Value**



# Appendix



NINA

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# Proven Technology: Advanced Boiling Water Reactor (ABWR)



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**ABWR is the most viable approach to new nuclear**

	<i>Our Choice</i> ABWR	ESBWR	AP1000	EPR
Manufacturers	GE, Hitachi, Toshiba	GE	Westinghouse	AREVA
Unit Size	1,350	1,600	1,000	1,600
Reactor Design	Boiling Water Reactor	Boiling Water Reactor	Pressurized Water Reactor	Pressurized Water Reactor
NRC Certified Design	Yes	No	Yes	No
Status of Design Engineering	Completed except for site specific changes	In Progress	In Progress	In Progress
Units Commissioned / In Operation	4	0	0	0

- ✓ Already certified by NRC
- ✓ Four units successfully commissioned
- ✓ Design is complete
- ✓ Dependable construction schedule & supply chain

ABWR technology has been commercially deployed for 10 years in Japan with plants built "on time and on budget."



**Proven design: Timely construction, flawless operation**



# Nuclear at STP



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## Why Nuclear Power?

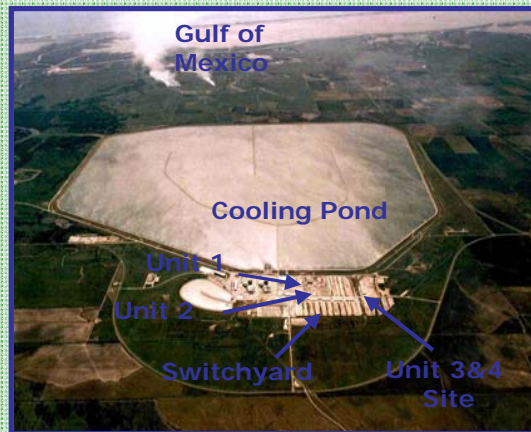
### Energy Independence<sup>1</sup>

- Avoids 37.6 million barrels of oil/p.a.
- Avoids 177 bcf of gas/p.a.
- Avoids 13.1 million tons of coal/p.a.
- Avoids 8,100 MW or 202,500 acres of land for wind

### Environmental Air Emission Displaced<sup>1</sup>

- Avoids SO<sub>2</sub> emissions of 40,918 tons/p.a. (3.46 lb/MWh)
- Avoids NO<sub>x</sub> emissions of 11,353 tons/p.a. (0.96 lb/MWh)
- Avoids mercury emissions of 828 lbs (0.56 oz/GWh)
- Avoids CO<sub>2</sub> emissions of 18.4 million tons (1,560 lb/MWh)

## South Texas Project



## Why STP?

- One of only two existing nuclear facilities in state
- Enormous footprint
- Common station facilities<sup>1</sup> (particularly reservoir) already designed for four units
- Ready access by barge and rail
- Widespread public support
- Open space and access to local Houston load center
- Top quality operator (STPNOC)

<sup>1</sup> Assumes 100% capacity factor for nuclear, ERCOT average (2005) and assumes representative technology by fuel type



**Nuclear power is the most efficient  
"zero carbon" power generation available**



# South Texas Project (STP) - “Today”



Key Operating Data for Current Units		
Unit	1	2
Commenced Operations	8/1988	6/1989
License Expiration	2027	2028
Net Capacity <sup>1</sup> (MW)	1,342	1,331
Technology	Westinghouse PWR	
Last Outage Cycle	10/2006	4/2007
Net Capacity Factor (3 year rolling avg.)	96.1%	94.7%

<sup>1</sup> Total MW capacity includes recently completed uprates

### Key Site Characteristics

- ✓ 4 unit site (2 currently operating)
- ✓ 12,200 acre site
- ✓ Barge & rail access
- ✓ 7,000 acre reservoir
- ✓ Low population
- ✓ Robust transmission system
- ✓ Minimal site preparation required

### Other STP Facts

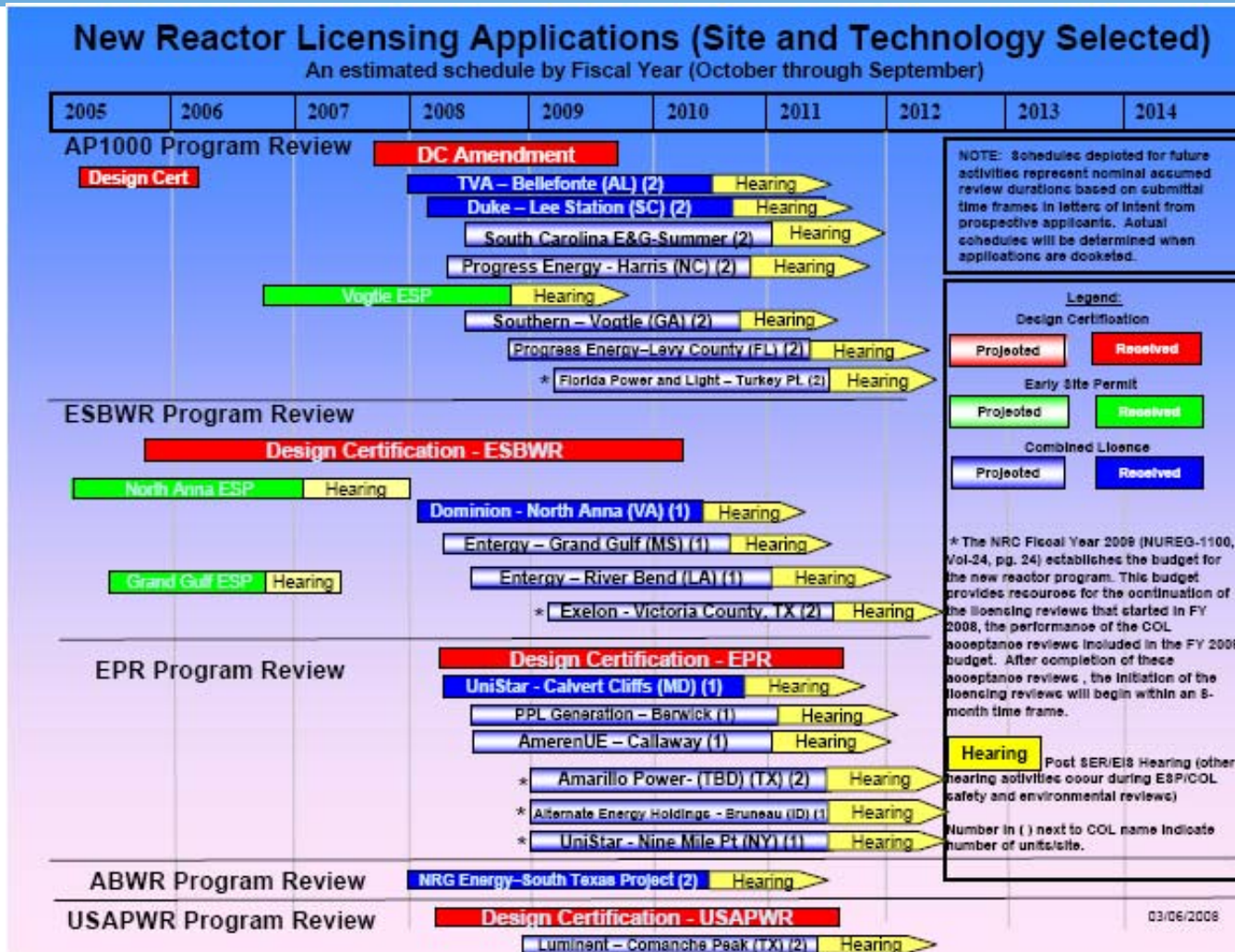
- ✓ **Owners** include NRG (44%), City of San Antonio (40%) and City of Austin (16%)
- ✓ **Operator and Fuel Manager** is South Texas Project Nuclear Operating Company or STPNOC
- ✓ **Fuel Storage** is adequate for current life of the units
- ✓ **Fuel Contract Coverage** is 100% through 2011 and 25% through 2021 for uranium, 100% through license life for enrichment, and 100% through license life for fabrication

★ Existing STP facility is young and robust ★

# New Reactor Licensing Applications at NRC (Site and Technology Selected)



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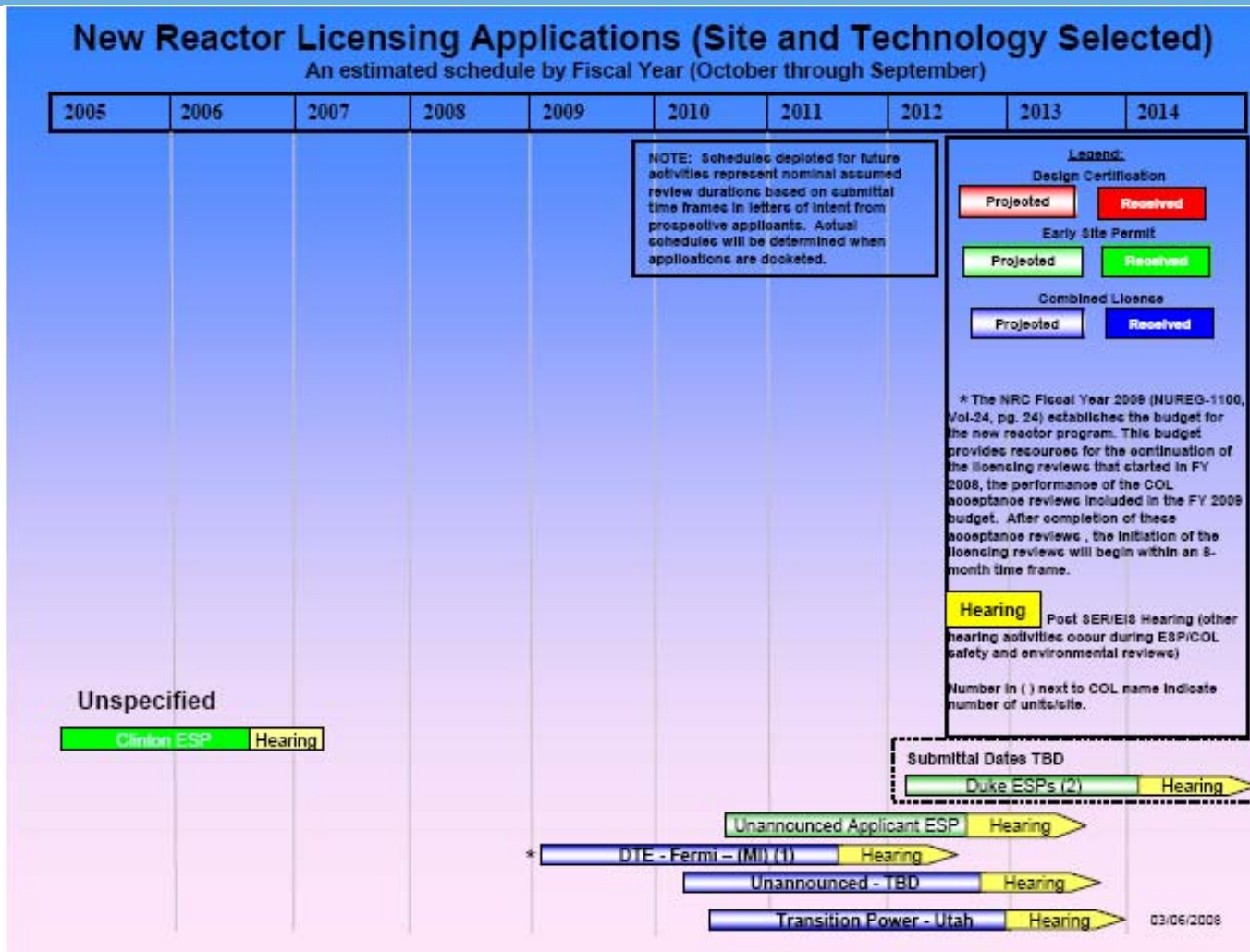
Source: NRC

## ABWR - certified by the NRC in 1997

# New Reactor Licensing Applications (Site and Technology Selected)



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Source: NRC

**ABWR - certified by the NRC in 1997**