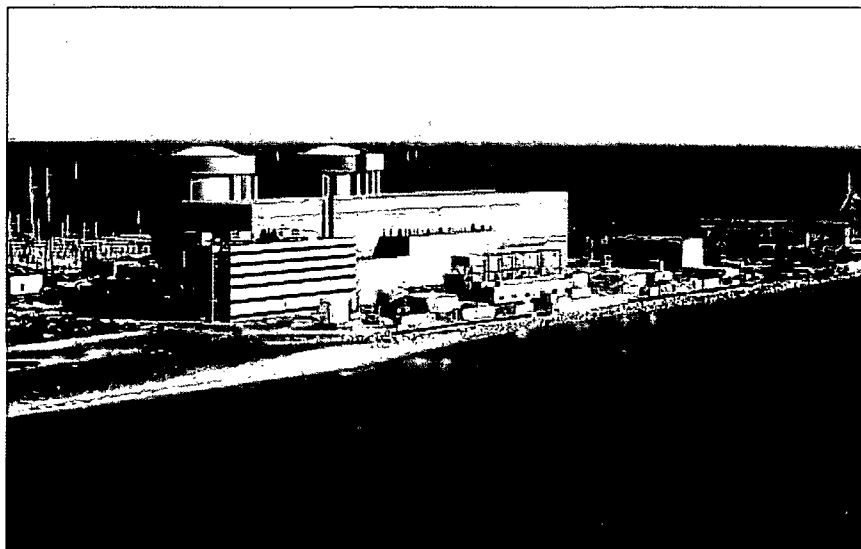




**Zion Nuclear Power Station
Project Greenfield**



**Decommissioning of
Zion Nuclear Power Station**
January 8, 2008



Thomas O'Neill

Vice President, New Plant
Development, Exelon Nuclear

John Christian

President, Commercial Services
Group, EnergySolutions



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Agenda

I. Introductions

II. Purpose of the Meeting

- Thomas O'Neill, Exelon Nuclear

III. Current Exelon Approach

- Patrick Simpson, Exelon Nuclear

IV. Overview of the Agreement

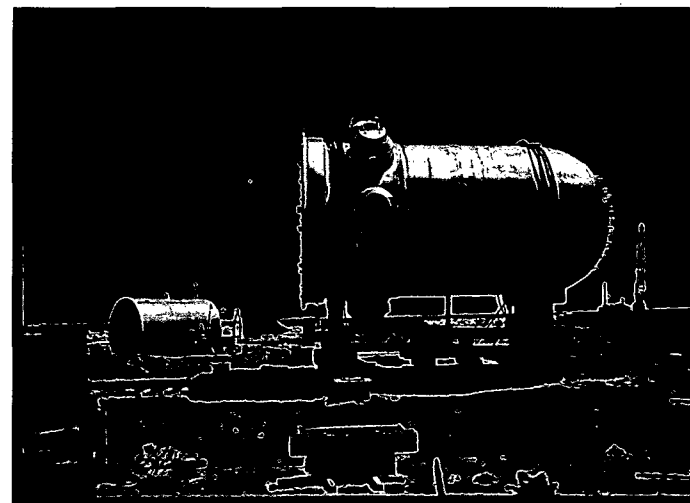
- John Christian, EnergySolutions

V. Approach and Technical Qualifications

- Patrick Daly, ZionSolutions

VI. Financial Assurance

- Thomas Magette, EnergySolutions





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II. Purpose of the Meeting

Thomas O'Neill

**Vice President, New Plant Development,
Exelon Nuclear**

- Communicate intent to commence decommissioning of ZNPS earlier than previously planned
- Describe the approach and benefits of license transfer to *ZionSolutions*
- Overview of the post-transfer organization and qualifications
- Discuss project schedule



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- **Public Outreach**
 - **Local Stakeholders**
 - Zion Community
 - Lake County
 - **Regulatory Stakeholders**
 - NRC Region 3
 - State of Illinois
 - **Media**



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III. Current Exelon Approach

Patrick Simpson
Licensing Manager, Exelon Nuclear

- Zion – two essentially identical pressurized water reactors with supporting facilities
- NRC licensed both units to operate in 1973
- Decision to permanently shutdown
 - January 1998
 - Based on economic analysis
 - Permanent shutdown certified to NRC
- Plant no longer authorized to operate
- Licenses remain in effect until terminated by NRC

- Post-Shutdown Decommissioning Activities Report submitted February 14, 2000
- Plant decommissioning divided into five periods
 - SAFSTOR preparations – complete
 - SAFSTOR dormancy – ongoing
 - All spent fuel stored in spent fuel pool
 - Spent Fuel Nuclear Island
 - Converted main generators to synchronous condensers
 - Preparations for decontamination and dismantlement begin 2013
 - Decommissioning operations begin 2015
 - SFNI remains operational until spent fuel removed by DOE
 - License termination activities 2024 to 2026
 - Site restoration scheduled for completion in 2028



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- Exelon's estimate of decommissioning costs through site restoration is approximately \$1,138M (2008\$)
- Fund balance as of December 2007 is approximately \$912M



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IV. Overview of the Agreement

John Christian

President, Commercial Services,

EnergySolutions

and

President, *ZionSolutions*



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- Pre-planning contract signed July 29, 2007
 - Engineering studies for ISFSI, security, environmental, and temporary power completed in December 2007
 - Characterization of reactor vessels to be completed February 2008
 - Pre-mobilization activities in 2008 include
 - Key personnel
 - Procedure development
 - Rail spur upgrade
 - Continuation of site characterization
 - Baseline validation and site walk downs
- Formal asset sale agreement signed December 11, 2007
- Closing
 - Expected by 3rd or 4th quarter 2008
 - Follows receipt of necessary regulatory approvals, including NRC approval of license transfer



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- *ZionSolutions*
 - Acquire the assets of ZNPS
 - Lease the land from Exelon
 - Take possession of used nuclear fuel
 - Become the licensee for ZNPS
 - Assume full responsibility for licensed activities
 - Assume all liabilities and obligations for radiological decommissioning and site restoration
- Exelon will retain title to
 - Real estate and certain improvements
 - Used nuclear fuel
 - Greater than Class C (GTCC) waste



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- Used Nuclear Fuel
 - Exelon's ownership of and title to is authorized pursuant to general licenses granted in 10 CFR 31.9, 40.21 & 70.20
 - Exelon has a Standard Contract with DOE for disposal of used nuclear fuel
 - Contract subject to a fleet-wide settlement
 - Partial assignment would be problematic
 - Under NWPA, Standard Contract rights are expected to flow with title, e.g., 42 U.S.C. 10222(b)(4)
 - ZionSolutions does not require a Standard Contract per 42 U.S.C. 10222(b)(1)(A), because it is not authorized to use any fuel in the reactor



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- License Transfer Application
 - Exelon and ZionSolutions to submit in January 2008
 - Application for transfer of 10 CFR Part 50 licenses
 - Include updated decommissioning cost estimate summary
- Submit Amended PSDAR
 - PSDAR to reflect ZionSolutions approach
 - Submit by end of February 2008
 - Effective upon transfer of ZNPS to ZionSolutions
 - Include Spent Fuel Management Plan



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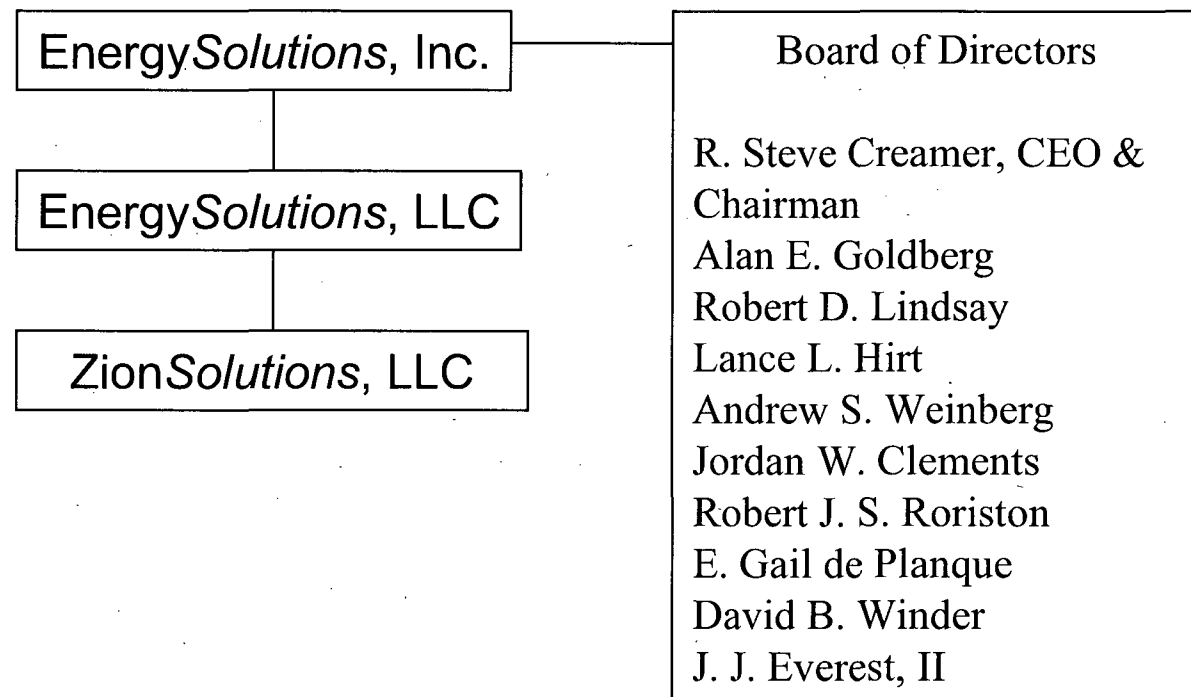
- Technical Qualifications
 - EnergySolutions core competence – key personnel and experience
 - Incumbent Zion employees
 - Sargent & Lundy, Zion Architect Engineer
 - Site security contractor
- Financial Assurance
 - Nuclear Decommissioning Trust Fund
 - Performance guarantee
 - \$200 million Letter of Credit
 - LLW disposal capacity asset



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ZionSolutions, LLC Organization Chart





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V. Approach and Technical Qualifications

Patrick Daly
Vice President and General Manager,
ZionSolutions

Technical Approach

- *ZionSolutions* will
 - Perform radiological decommissioning
 - Complete site restoration
 - Build an onsite ISFSI
 - Relocate the spent fuel and GTCC waste
 - Maintain the ISFSI until license termination or transfer back to Exelon
 - Support operation of the Synchronous Condenser as needed by Exelon
- *ZionSolutions* plans to complete work within 120 months
 - Contract milestones and lease payments provide schedule incentives

Why pursue a different approach

- ZionSolutions assumes site control and responsibility
- Leverages EnergySolutions core competencies
 - Decommissioning
 - Waste disposal
 - Spent fuel management
- Minimizes delays and focuses accountability
- Eliminates future uncertainty associated with LLW disposal
 - Cost
 - Access
- Provides additional financial assurance beyond the trust fund

Why the License Transfer is beneficial

- Earlier radiological decommissioning
- Expeditious reduction of source term material
- Decrease in risk of inadvertent release of contaminated material
- Earlier release of the restored site for beneficial reuse

The biggest difference in approach is “Rip & Ship”

- Estimate of LLW sent off site for disposal
 - **TLG – 500 thousand cubic feet**
 - *EnergySolutions* – **6 million cubic feet**
- Advantages
 - Reduce duration of clean-up
 - Minimize risk of inadvertent release of radiologically contaminated material
 - Reduced costs for decontamination (e.g., chasing joints and cracks)
 - Reduced costs of extensive free release program for equipment and debris
 - Schedule and cost savings related with volume reduction of LLW
 - Size for transportation on site
 - Size for disposal off site

- Source term removal within radiologically controlled areas
 - Minimize survey and surgical removal
 - Utilize large capacity gondola rail cars to move LLW to Clive
 - Release plan using MARSSIM guidance
 - Affected systems/buildings – ship to Clive
 - Unaffected systems/buildings – release
- Remove structures to a minimum of 3 feet below grade
- Partial site release for unrestricted use
 - Based on Final Status Surveys and NRC verification
 - Requires license amendment to meet the end state

Source Term Removal – Containment Buildings

- Remove Reactor Vessel internals
- Package GTCC waste for storage
- Disposition Class B&C waste
- Remove and ship for disposal
 - All large components – SGs, Pressurizers, RVs, RCPs (*Critical path*)
 - Refueling cavity liner
 - Biological shield
 - Drains
 - Remaining primary system components
- Remove polar crane and concrete to a point that the inside of containment can be released for demolition

Source Term Removal – Aux/Fuel Building

- Place all spent fuel and GTCC waste in an approved ISFSI
- Remove and dispose
 - Contaminated systems and tanks from the Aux building
 - Fuel racks, pool liner, and associated equipment within the fuel building
 - Drains and sumps
 - Embedded piping
- Hold up tanks removed during demolition
- Demolish building to basement level
 - Building debris sent to Clive
 - Survey
 - Backfill

Source Term Reduction – Balance of Plant

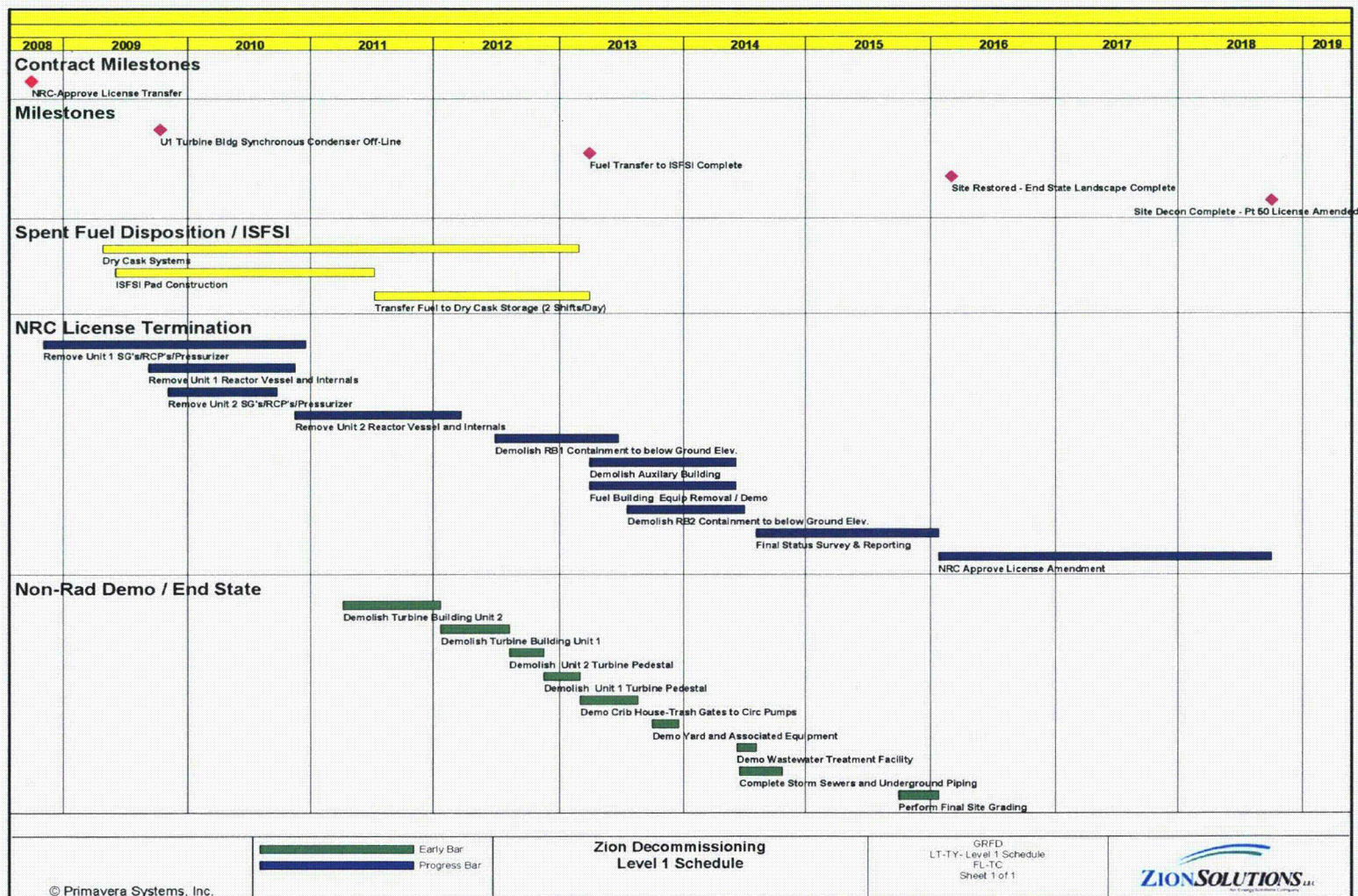
- Secondary system considered impacted due to previous Steam Generator tube leaks
- Remove secondary system for disposal at Clive
 - Major components
 - Outside tanks, storage facilities that are considered impacted
 - Water treatment drying beds and concrete
 - Contaminated Soil
- Release for clean disposal or recycle
 - Components that can be surveyed without impacting critical path
 - Non-contaminated equipment

Non-Rad Materials and Areas

- Remove hazardous materials such as asbestos, light ballasts, PCB's, Hg switches, and snubber oil before removal of components or demolition
- Survey areas per MARSSIM plan
- Pulverize for backfill
 - Clean concrete
 - Balance of plant
 - Outside of containments
- Clean components with scrap value will be evaluated for salvage (not to impact critical path)



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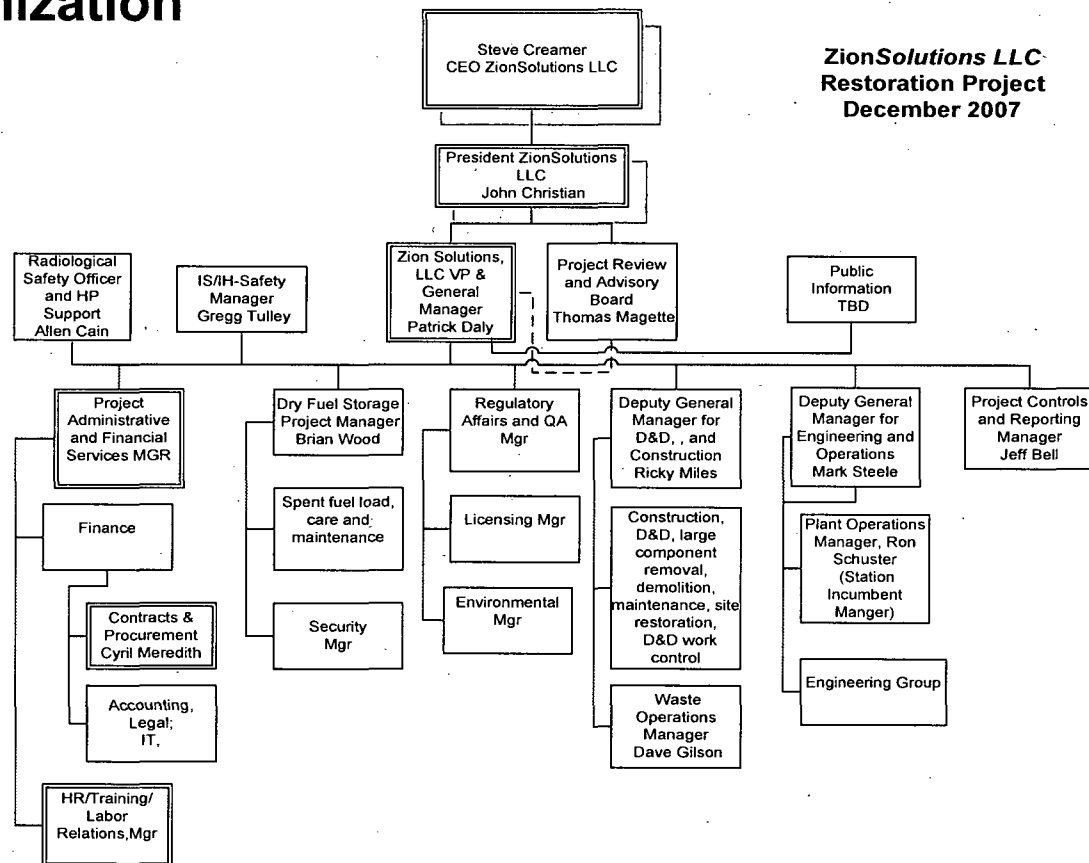




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Project Organization



Project Organization

- Upon license transfer *ZionSolutions* assumes full responsibility for and control over the ZNPS
- Current Exelon employees remain supporting maintenance of the license conditions, synchronous condenser, and switchyard
- Security contract assigned to *ZionSolutions*
- *ZionSolutions* will adopt the existing QA, emergency preparedness, training, and security procedures
- Establish these functions at the ZNPS using project and incumbent personnel



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EnergySolutions Preliminary Un-escalated Cost Estimate Summary

		(\$ Millions)
Amount Expended Through 2006		\$42.0
Exelon 2007 - 2008 Fuel Storage Costs		\$21.0
Exelon Fund Retainage		\$25.0
Exelon Tax Liability Retainage		\$11.0
Preliminary Planning		\$12.4
Dismantlement Activities		
Decontamination	\$4.3	
Removal	\$131.9	
Transportation & Disposal	\$169.7	
Project Staffing	\$198.4	
Materials and Equipment	\$29.6	
Insurance and Regulatory Fees	\$2.7	
Other Decommissioning Costs	\$88.5	
Total Dismantlement Costs		\$625.1
		\$736.6
Spent Fuel Storage		\$201.5
Site Restoration		\$51.6
Total Decommissioning Costs		\$989.6

Based on 2007 Dollars

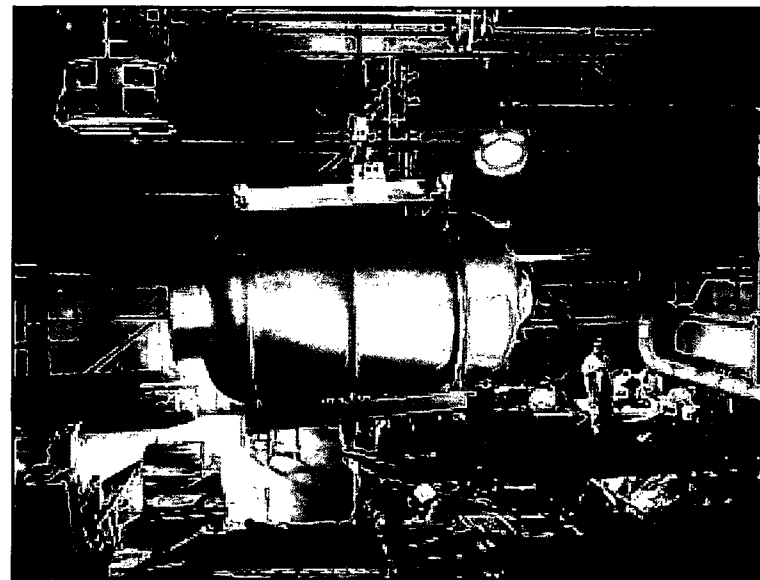
Note: Dismantlement and Spent Fuel Storage Costs equal un-escalated raw cost plus contingency, corporate allocation and profit.

Project Controls

- Based on lessons learned from past D&D projects
- Baseline project controls tied to financial reporting systems to track costs to specific WBS elements
- Report monthly on cost and schedule variances plus earned value
- Manage cash flow to baseline
 - Ensure the trust fund has adequate funds to cover estimate to complete
 - Requires reporting back to Exelon
- Accountability reviews by corporate and external stakeholders including Exelon

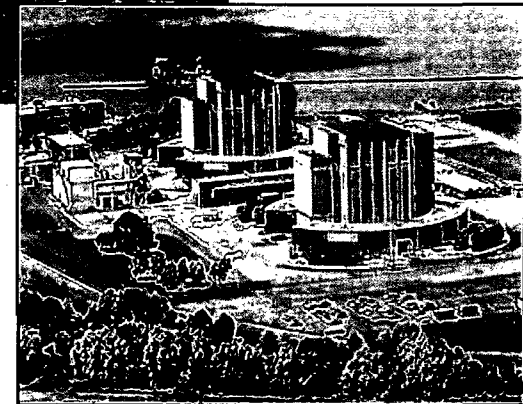
Technical Qualifications – Decommissioning

- Turnkey facility D&D, including source removal experience
- Reactor D&D experience
 - Research reactors
 - Commercial reactors
- ETTP
 - Largest D&D project in DOE
- Rocky Flats
 - Proof of Rip and Ship approach
 - 2000 rail cars (6.8M cu ft) in 2005



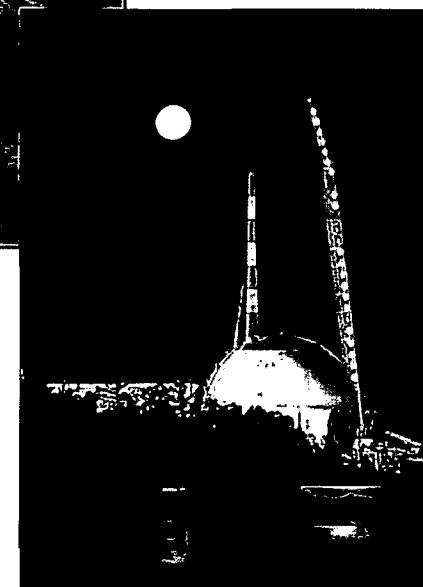
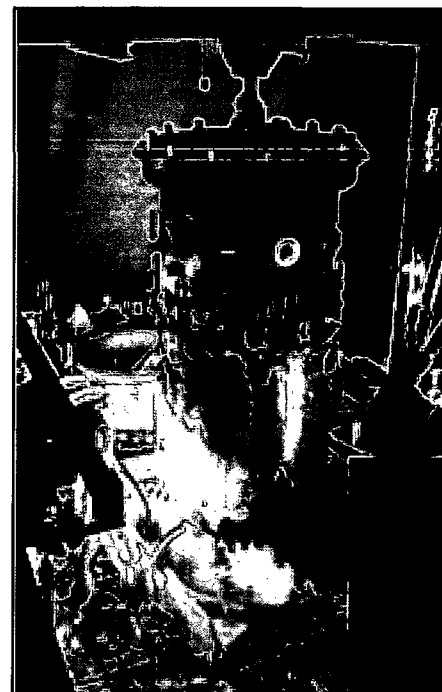
Reactor Decommissioning

- Key personnel with current expertise in the range of reactor types
 - PWRs
 - BWRs
 - Magnox Reactors
 - Gas-Cooled Reactors
 - Research Reactors
- Prompt decommissioning
- SAFSTOR (prompt and deferred)
- License termination
- Range of clients
 - 22 Magnox Reactors (UK)
 - Big Rock Point
 - Connecticut Yankee
 - Maine Yankee
 - Fort St. Vrain
 - La Crosse
 - Trojan
 - Rancho Seco
 - Fermi 1



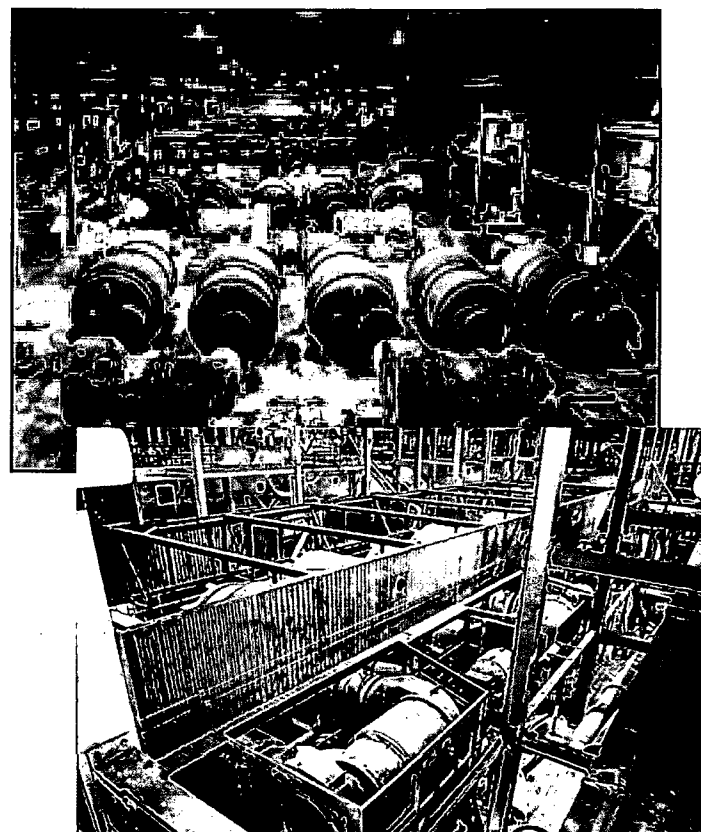
Big Rock Point

- Commercial reactor D&D
- Major component removal
 - Reactor vessel/internals
 - Reactor building components
 - Other major components
- Building D&D
- Waste disposition
- Project highlights
 - Removed reactor vessel intact
 - Dry Fuel Storage
 - Design
 - Licensing
 - Manufacturing



ETTP 3-Building D&D Project

- Largest completed D&D project in DOE
- Used 1400 fully-cleared workers
- Unparalleled D&D productivity
- Dispositioned 360 million lbs of contaminated material
 - 400 miles of piping
 - 44 miles of electrical conduit removed without incident
- 11,000 heavy lifts without incident
- Removed 3M lbs/week of material
- Operated world's largest nuclear D&D workshop



Technical Qualifications – Spent Fuel Management

- Development and licensing of technologies for storage, transport and disposal of Spent Nuclear Fuel (SNF)
- Procurement, fabrication and operation of cask systems for SNF and High Level Waste (HLW)
- Design, construction and operation of facilities for the management of SNF and HLW
- Specialized technical services: structural, shielding, criticality, thermal, civil, materials and welding, procurement, fabrication, quality
- Extensive experience in loading dry cask storage systems



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VI. Financial Assurance

Thomas Magette

**Senior Vice President, Commercial Services,
*EnergySolutions***

Financial Assurance

- Provided from a combination of sources
 - Zion Nuclear Decommissioning Trust Funds (NDT)
 - Performance Guarantee
 - \$200M Letter of Credit
 - LLW disposal capacity asset (Back-up NDT)
- NDT assets satisfy regulatory requirements and guidelines
 - 10 CFR 50.33(f)(2)
 - 10 CFR 50.75(e)(1)(i)
 - NUREG-1577

Nuclear Decommissioning Trust Fund

- Qualified and Non-Qualified Funds
- Exceptions
 - Operating funds and expenses for SAFSTOR, including taxes
 - \$25M (Non-Qualified) for potential future liabilities
- NDT sufficient to fund decommissioning
 - Accounting for future earnings
 - EnergySolutions updated cost estimate
 - Includes cost of dry fuel storage
- Updated cost estimate
 - Expected value of funds available – ~ \$900-950
 - Updated decommissioning estimate – ~ \$990
 - Difference covered by fund growth via earnings during the decommissioning period

Performance Guarantee

- Provided to Exelon for all obligations of EnergySolutions' subsidiary – ZionSolutions, LLC
- EnergySolutions' equity interest in ZionSolutions, LLC pledged as collateral
- Default under the Asset Sale Agreement
 - Exelon will have the right to take possession of the subsidiary and the Back-up NDT
 - ZionSolutions, LLC structured to provide protection against EnergySolutions bankruptcy (non-consolidation)
 - One ZionSolutions Director appointed by Exelon
 - Unanimous vote requirement for a voluntary bankruptcy filing

Letter of Credit

- Amount of \$200 million
- Issued by third party Financial Institution with strong credit quality
- Payable to Back-up NDT
- Exelon will monitor and enforce rights as beneficiary

LLW Disposal Capacity Asset

- Covers disposal of all Class A LLW from ZNPS at EnergySolutions' Clive, UT facility
- Held by Back-up NDT
 - Special purpose easement (legal instrument)
 - Dedicated to decommissioning
 - Protected from other creditors or obligations of ZionSolutions and EnergySolutions