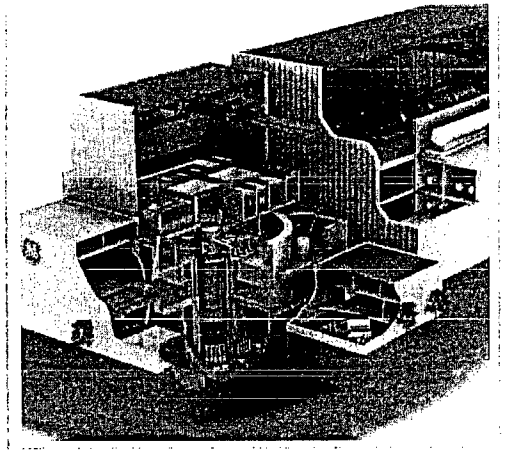
GE Update



Andy White

President & CEO, Nuclear Energy

imagination at work

C/10

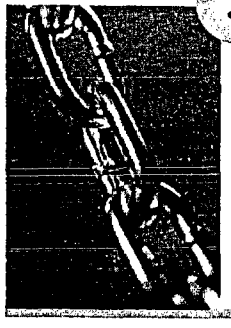
Strategic focus

1 Build a strong foundation

- Accelerate investment in resource, expertise and R&D
- Improve customer experience w/ 'culture & capability' model
- Invest in supply chain ... remove sole source limitations, expand new unit capacity
- Expand regional footprint w/ acquisitions, partnerships & organic growth

2 Invest in core business

- New units ... ESBWR + Gen IV
- Fuel...GNF 2, MOX and beyond
- Reactor services ... total outages
- Performance services ... new portfolio
- Uranium...Enrichment +
- Back end services ... investigate options



3 Expand our presence across the Value Chain

Mining & Milling	Conversion	Enrichment	Fuel Fabrication	New Units	Services	Spent Fuel Storage	Re-processing	Final Disposal
? Explore Relationships		✓ Silex	✓ Add PWR	✓	✓ Add PWR	✓ New	? Explore	✗

Nuclear Vertical

Field Services

- Outages
- Mods & Repairs
- Inspection Services

- Outages
- Mods & Repairs
- BOP Services

Fuel Engineering Services

- Core Design
- Reload Optimization
- Technical Services

Nuclear Fuel

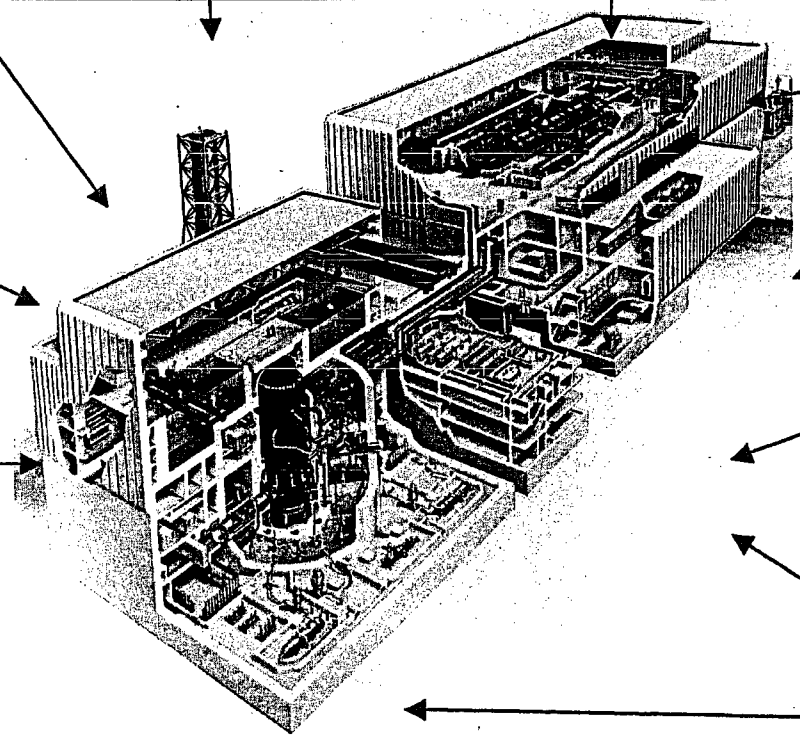
- BWR
- CANDU
- Components
- Container IP

New Plants

- ABWR
- ESBWR
- Control Systems

- ST (50 & 60 Hz)
- Generators

- BOP



Performance Services

- ST Gen Upgrades
- I & C
- ST & Gen M&D
- BOP M&D

- Economic Analysis
- Grid Analysis

- Power Uprates
- Water Chemistry
- Control Systems
- Technical Services

Parts

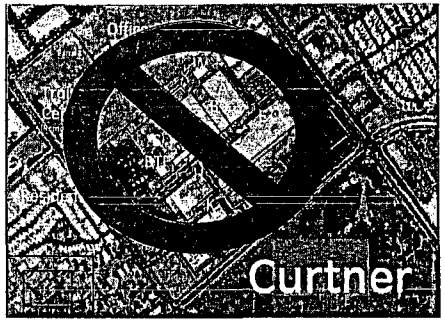
- ST & Gen
- BOP

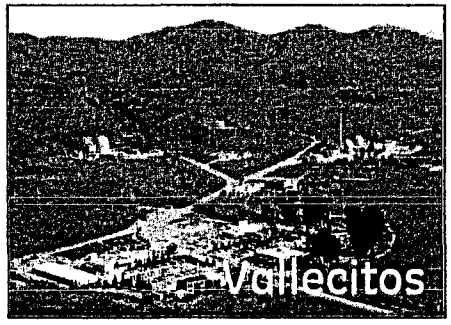
- Control Rods, Drives & BOP

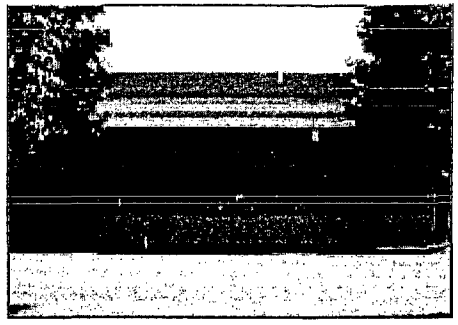
Power Gen | Energy Svcs | Nuclear

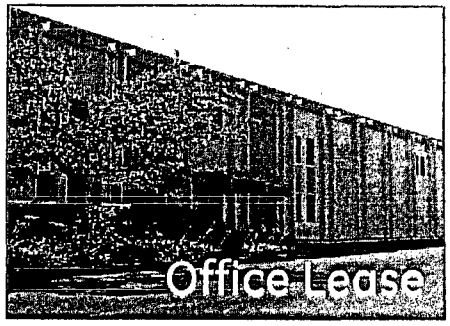
Plus Water, Security, Financing Options

Simplification & Consolidation

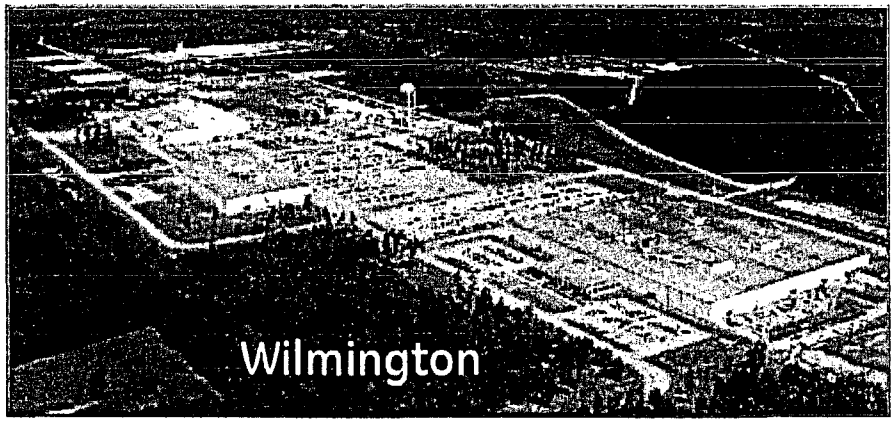


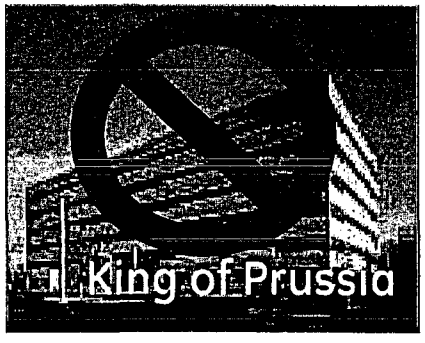


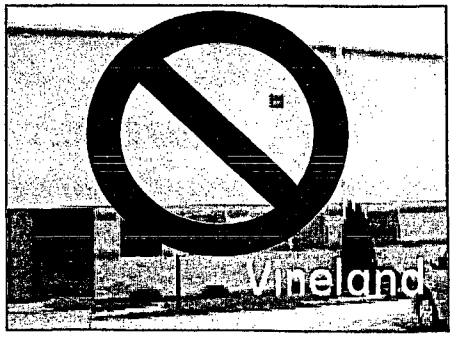


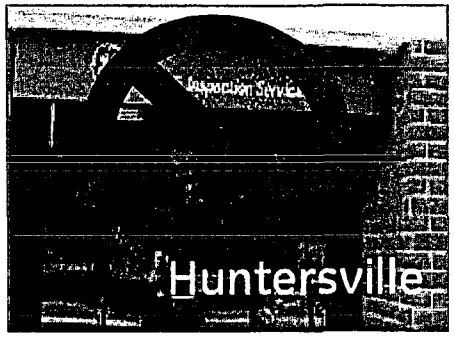


- 95% BWR's are in the East and South
- Customers requesting move
- Improved economics and incentives
- Closer to INPO, NEI, NRC, new build
- Recruiting and retention

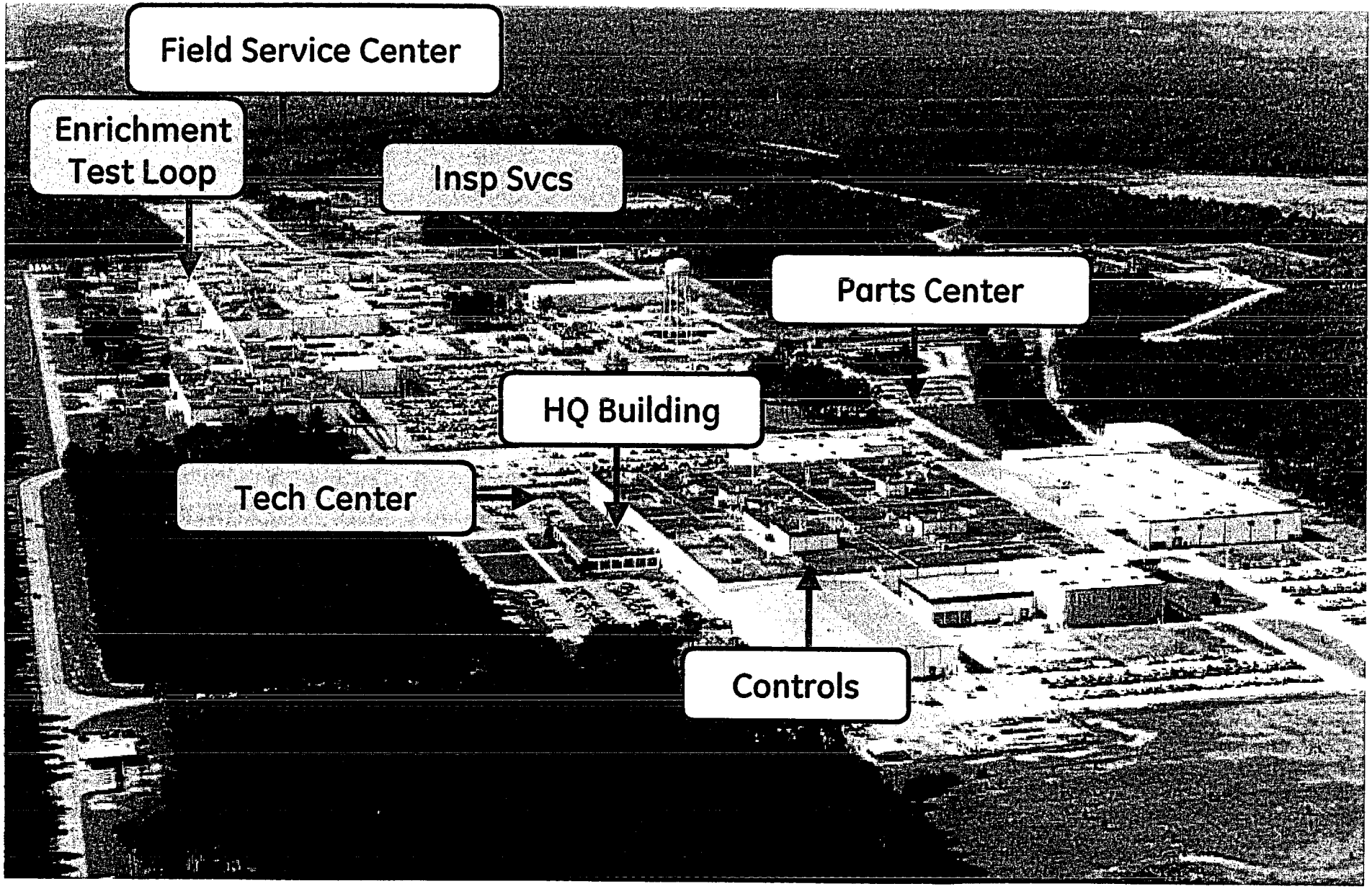




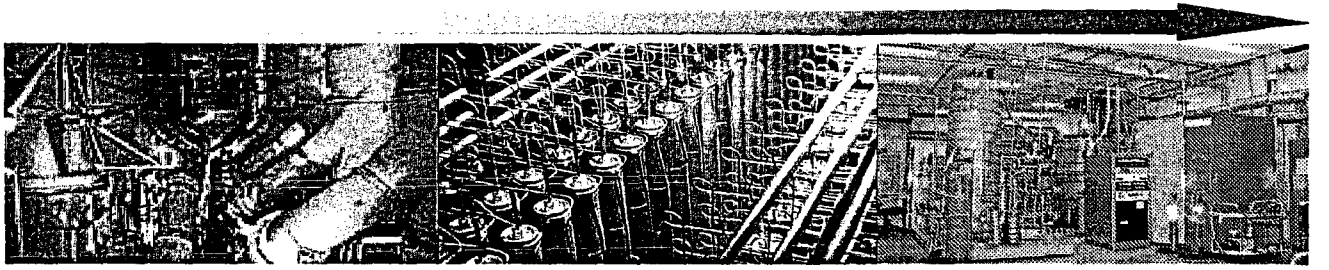




Wilmington Site



GE Enters Uranium Enrichment ...



	Gaseous Diffusion	Centrifuge	Laser Isotope Separation
GENERATION	1st	2nd	3rd
PROCESS	Mechanical	Mechanical	Laser Excitation
% OF EXISTING PRODUCTION[1]	45%	40%	0%

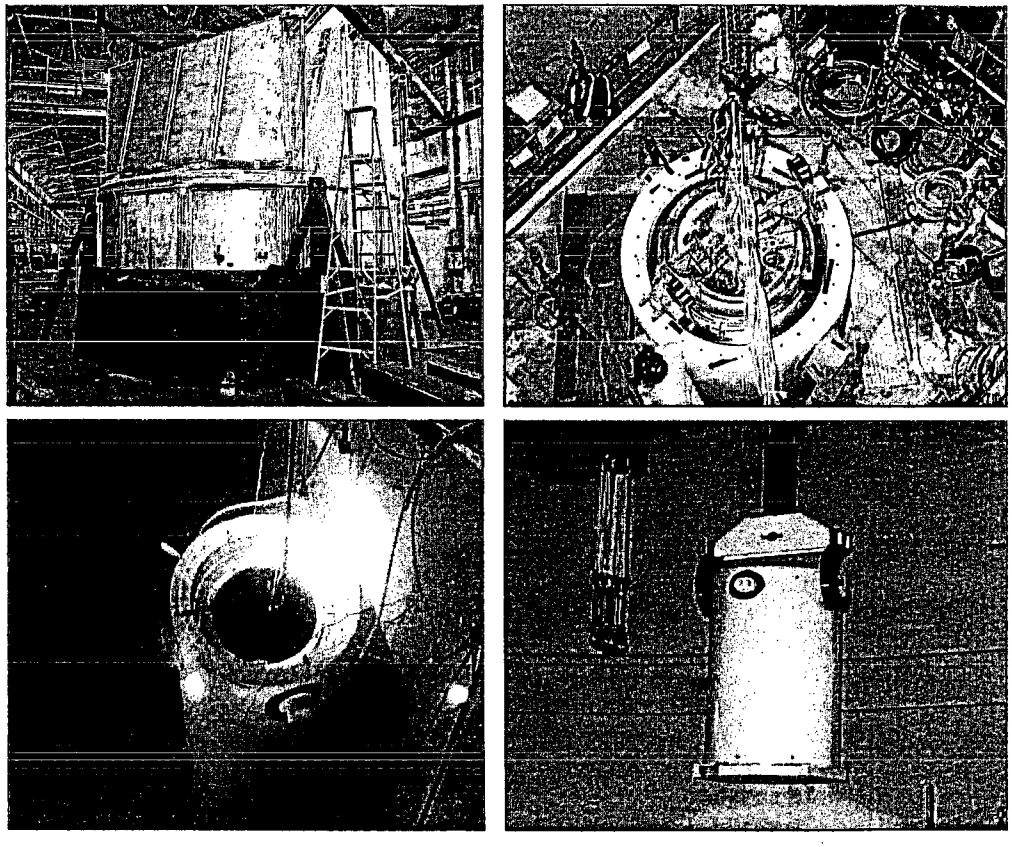
[1] Remainder from HEU

- ✓ U.S. Government wanting technology in U.S. company hands
- ✓ Resolved roadblocks to attaining projected laser isotope separation efficiencies
- ✓ GE/Silex – synergies to commercialize this innovative technology
- ✓ Improved cost of enrichment in the long term
- ✓ Wilmington location ideal

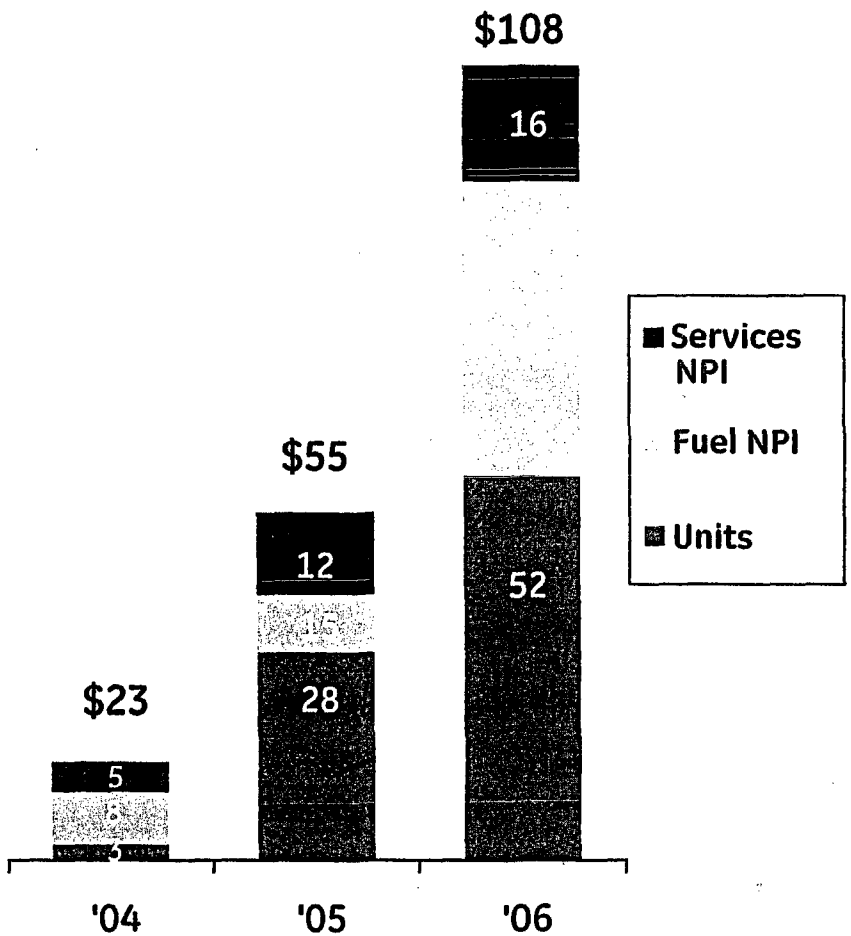
GE Enters Fabrication & Dry Cask Business...

Ionics Purchase

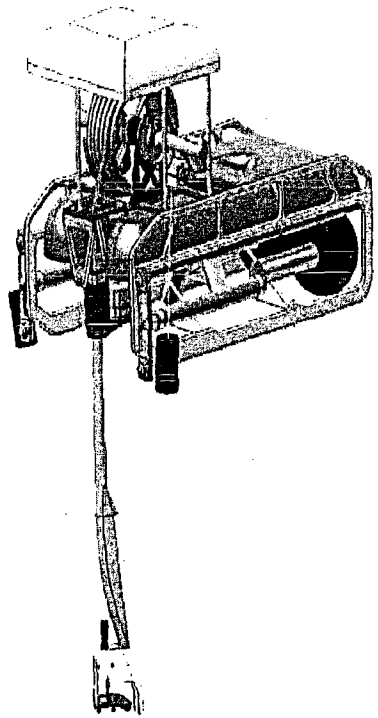
- Dry Fuel Canisters
- Transfer Casks
- Cask Liners
- Steam Dryers & Strainers

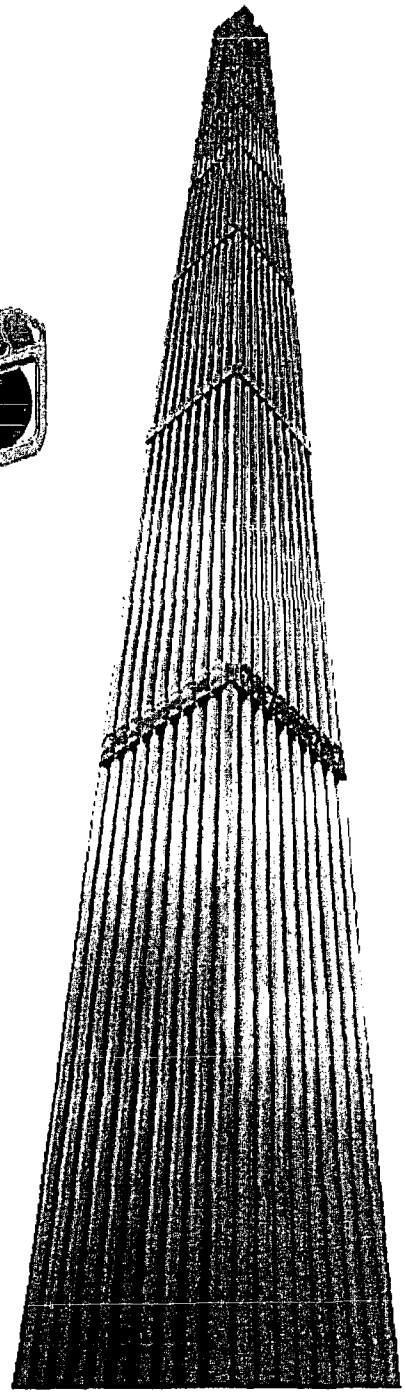


New Products / Programs
($MM)



%Sales 2 6 11

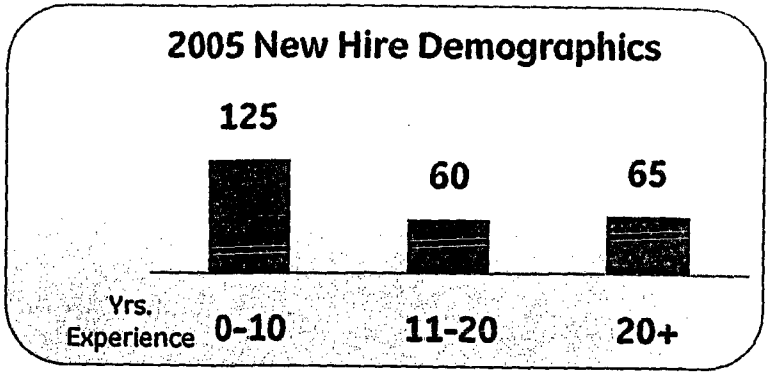




imagination at work

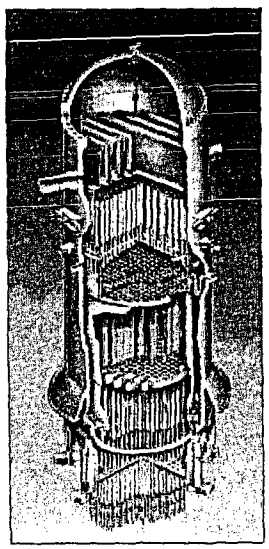
Talent Infusion

- 420 new hires since 2004
- Currently hiring 30 per month
- Mix of college & experienced talent
- Building solid bench

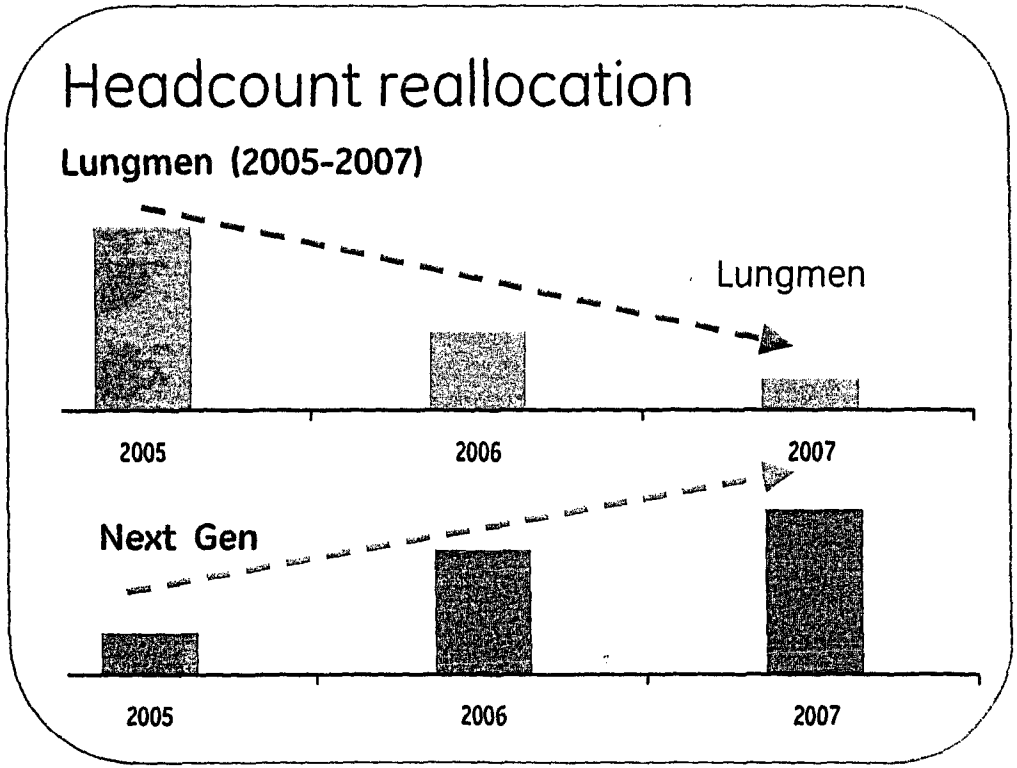


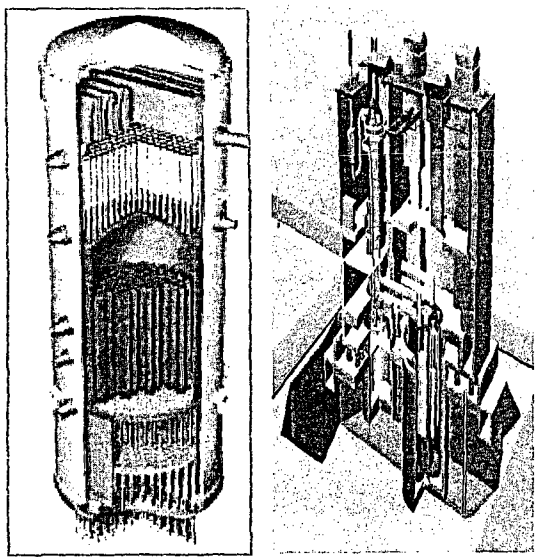
New Unit - Personnel Alignment

- ✓ ESBWR & future new units move to Wilmington ...attracting new personnel
- ✓ Top talent realigning to Next Gen ... transferring lessons learned



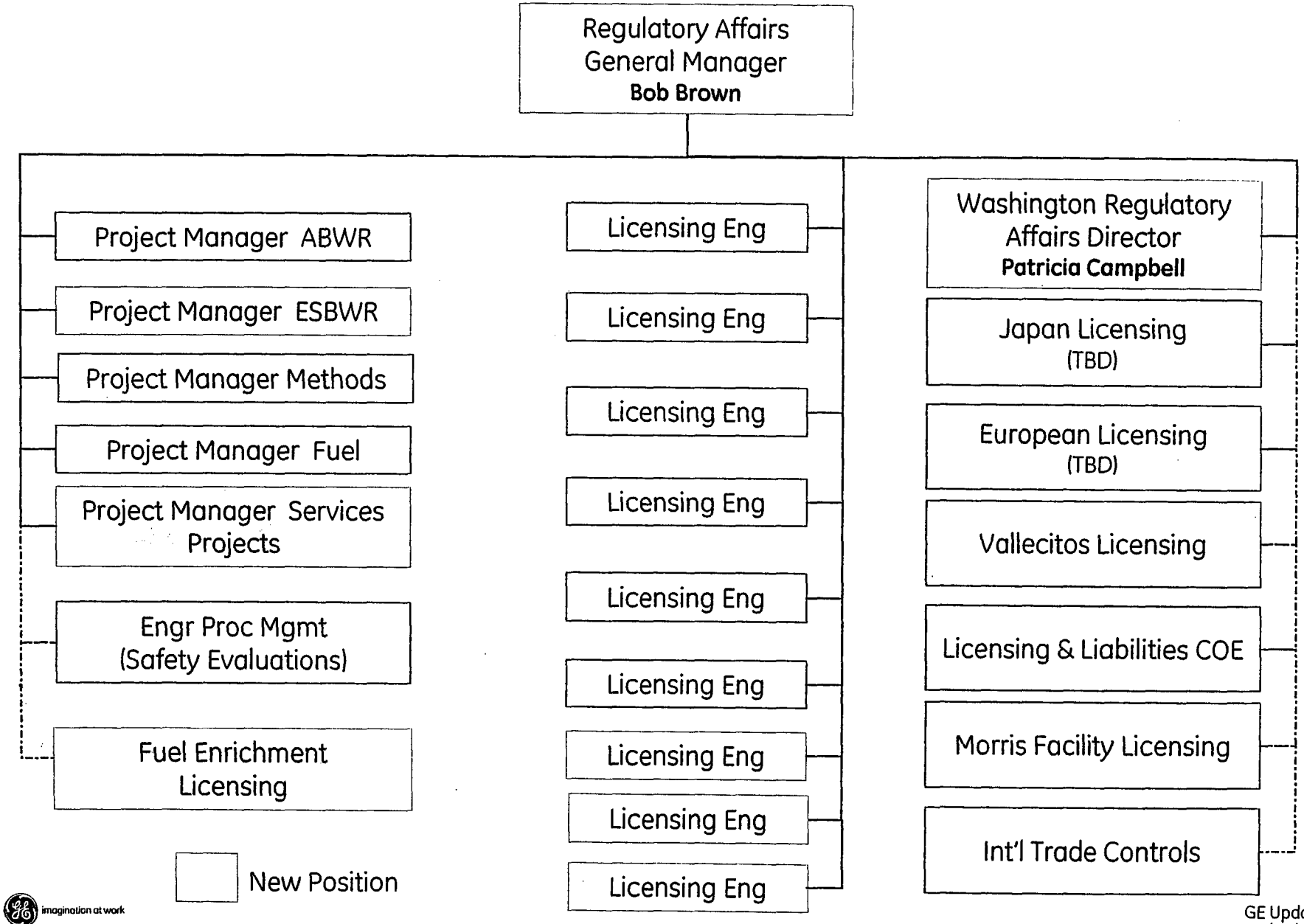
Asia Projects





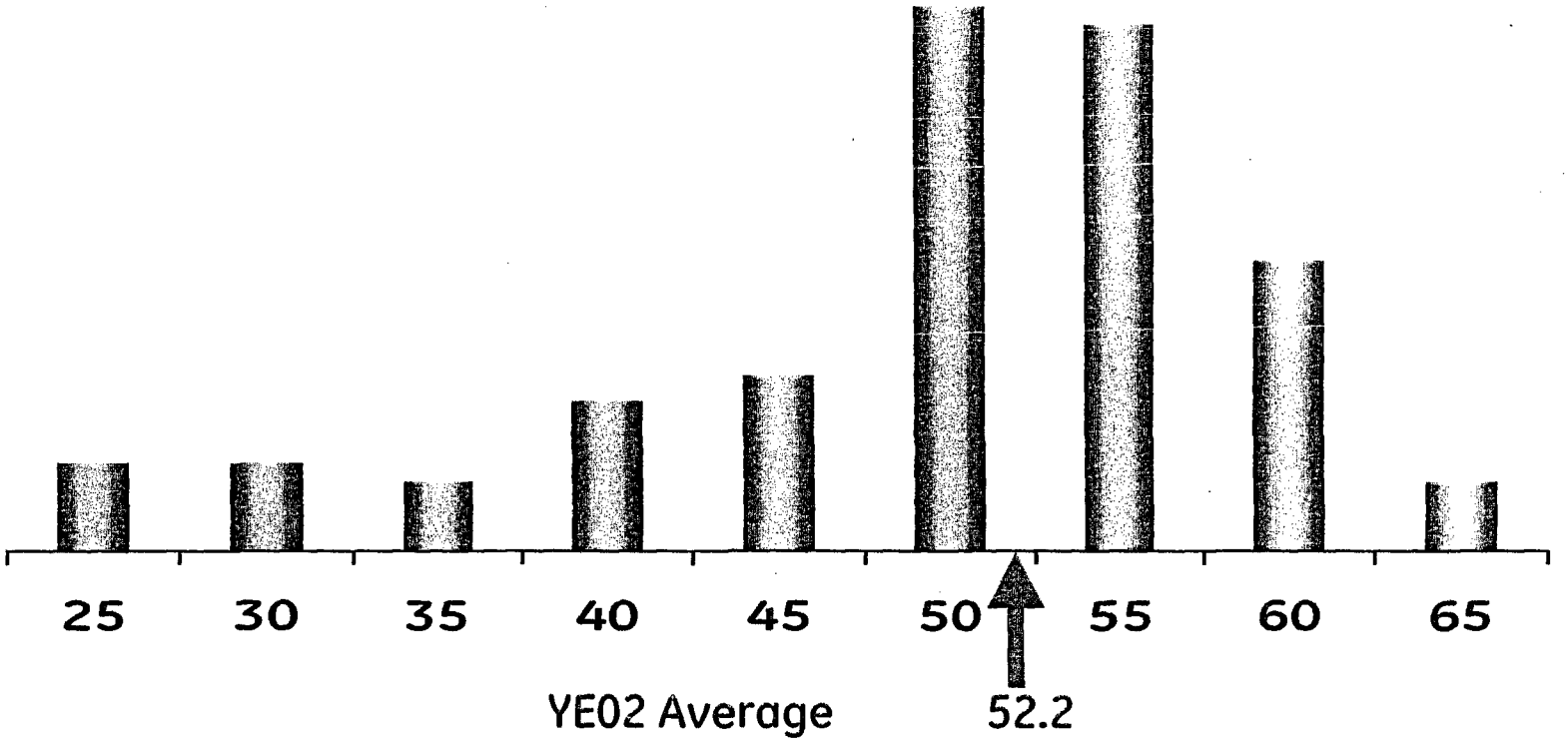
Next Gen

Regulatory Affairs

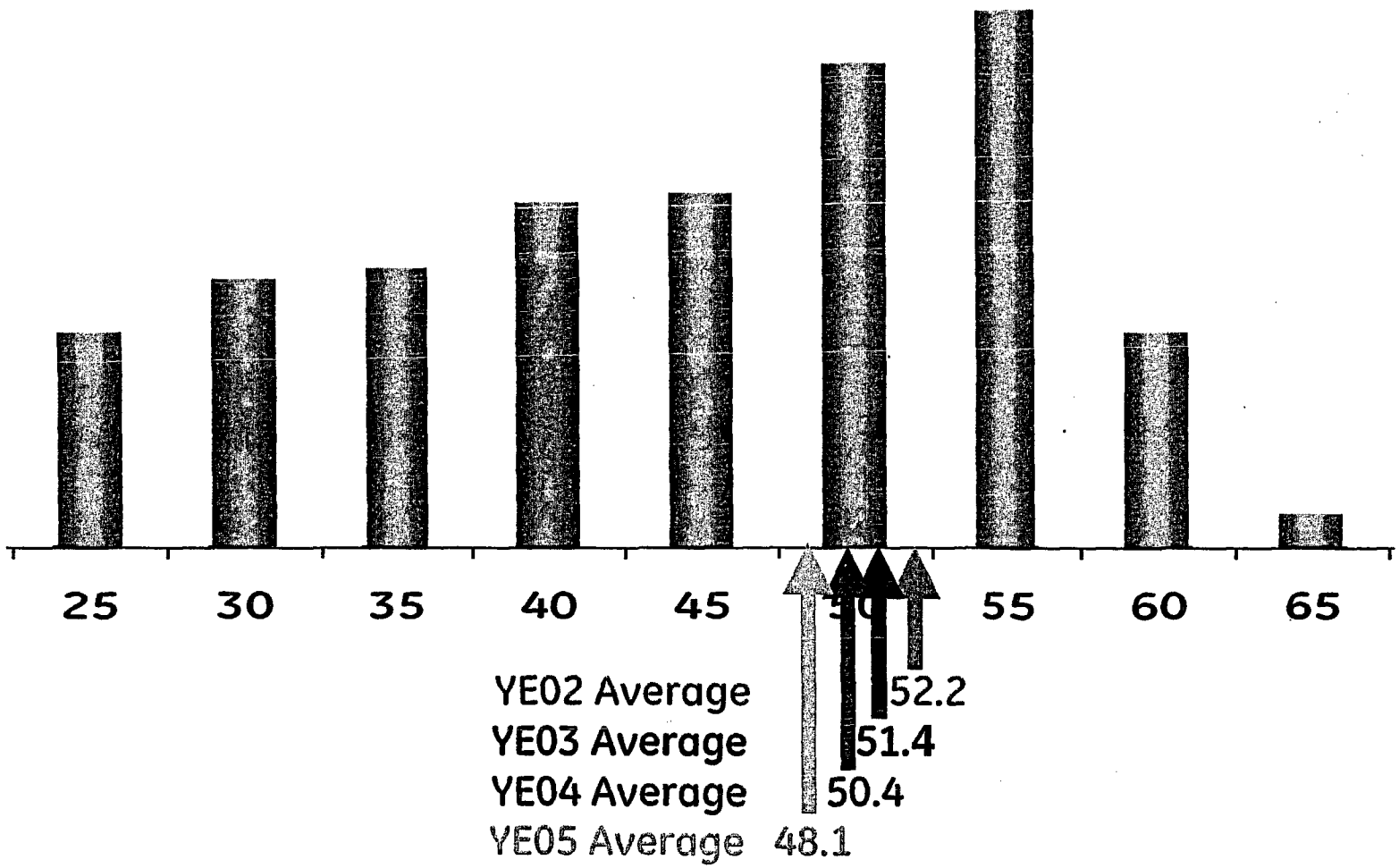


imagination at work

Resulting Impact on Demographics



Resulting Impact on Demographics



Human Performance

...The Environment

- Customers embracing, implementing & requesting HU
- GE benchmarking industry best practices

SOUTHERN COMPANY — Energy to Serve Your World | Entergy | Progress Energy | Exelon

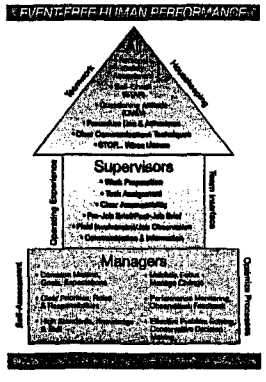
... The Catalyst

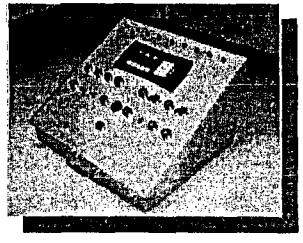
- Hired leader with strong INPO & industry experience
- HU Council Formed – Strong Leadership & Commitment

... The Improvement

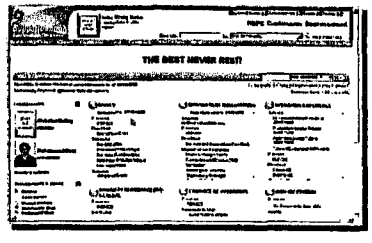
- Core Focus Areas Targeted for Improvement
- Training and Practical Application of HU Tools

and the Tools...

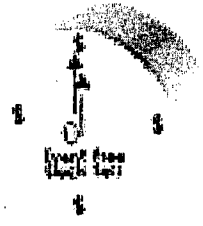




Training Simulator

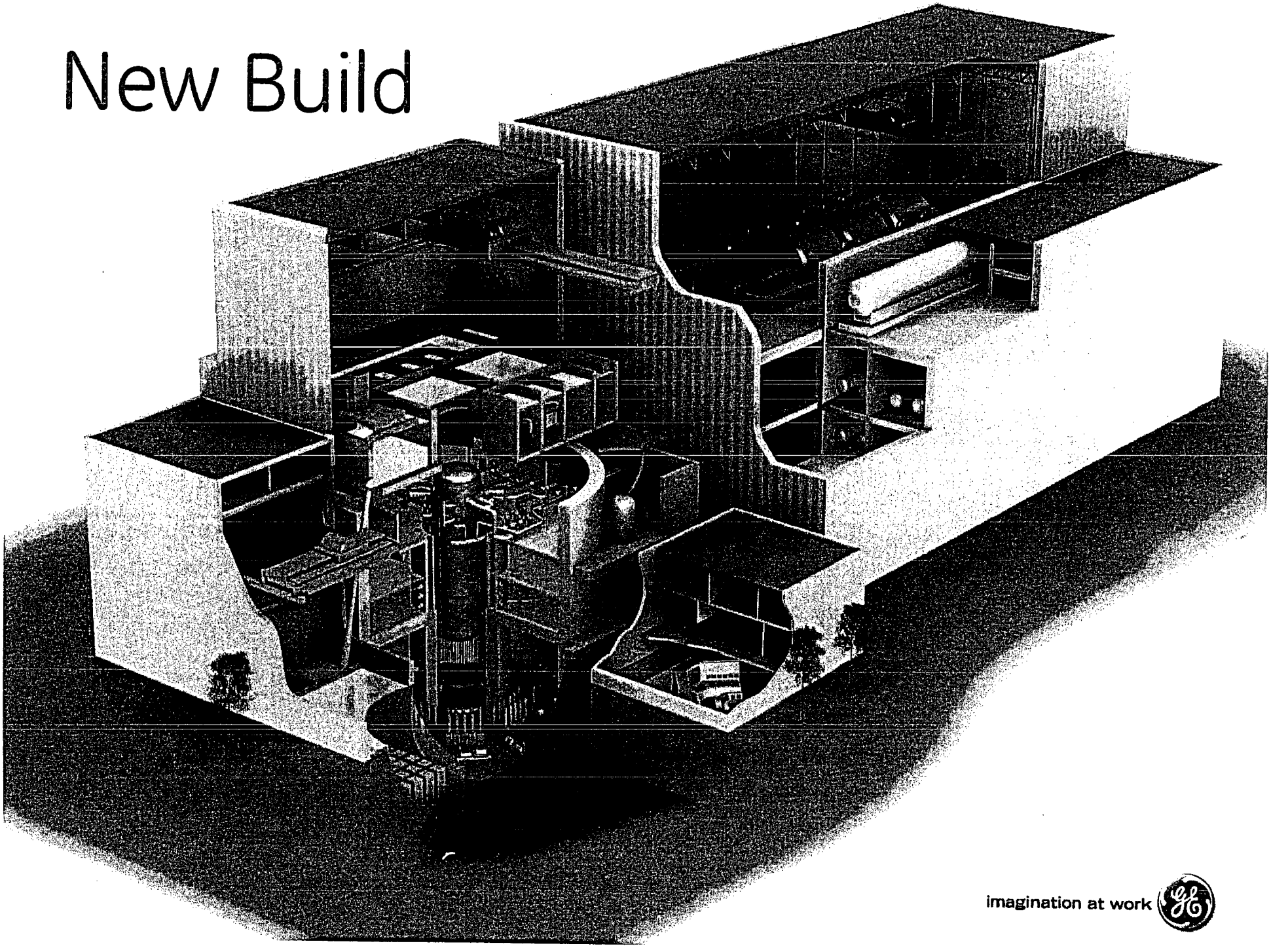


On-line ...Remote Accessibility 24 / 7



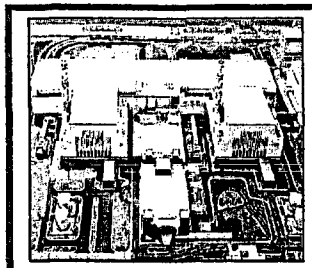
Event Clocks...
Rewards & Recognition

New Build



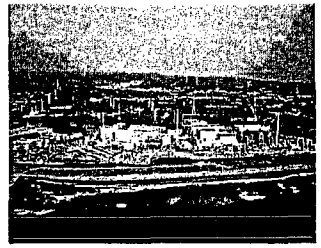
imagination at work

Gen III New Units



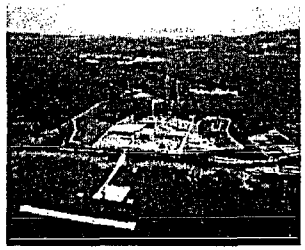
Kashiwazaki 6&7, Japan

Online



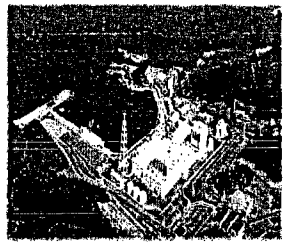
Hamaoka 5, Japan

Online



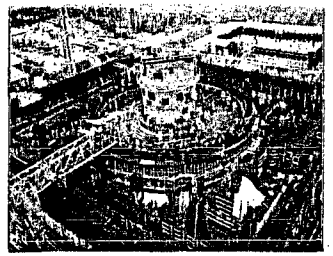
Shika 2, Japan

On Line



Shimane 3 Japan

Building

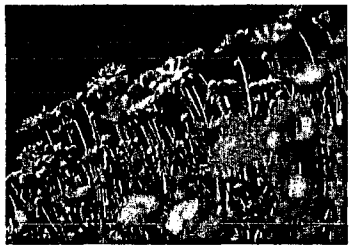


Lungmen 1&2 Taiwan

Building

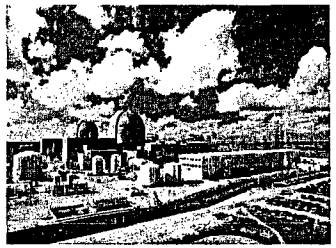
Ohma, Japan

Approved



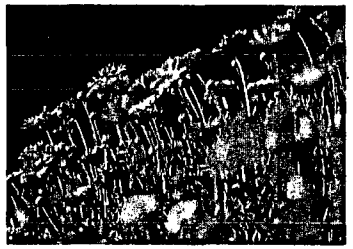
Higashidori 1&2, Japan

Planning



STP / NRG 3&4, USA

Planning



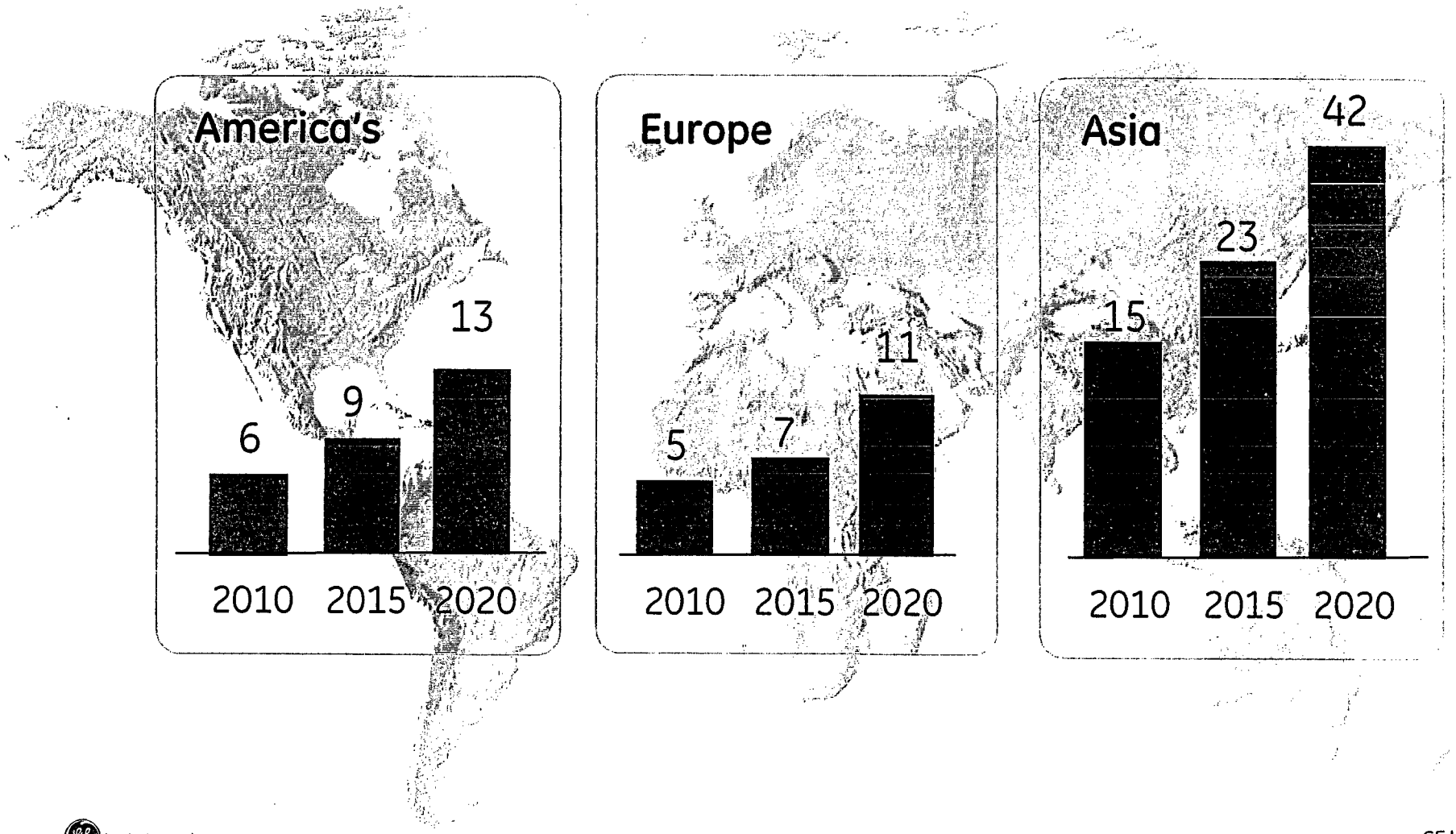
Amarillo 1&2, USA

Study

imagination at work

Future outlook

New Construction Forecasts ... (Orders; GW Cumulative)

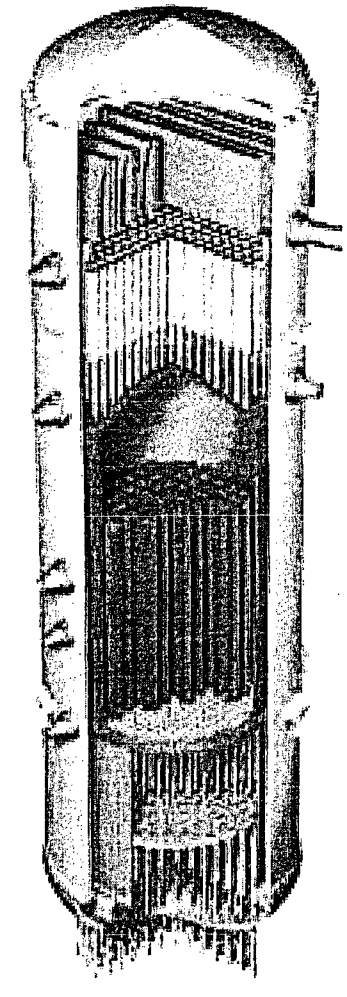


imagination at work

Next Gen Reactors...Gen III+

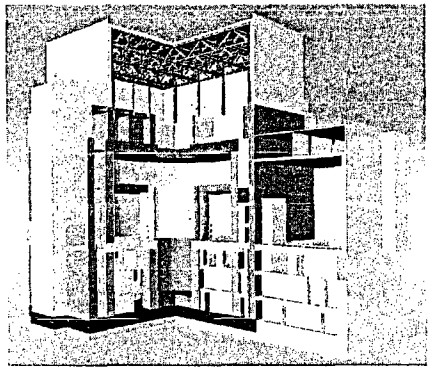
Customer / Industry Objectives

- Simplified design
- Lower capital costs
- Faster construction period
- Design for O&M ... lower cost...easier
- Fewer O&M staff / less specialized
- Improved forced outage rates
- Improved safety and security
- Lower dose & reduced waste
- Risk sharing & financing options
- Standard design

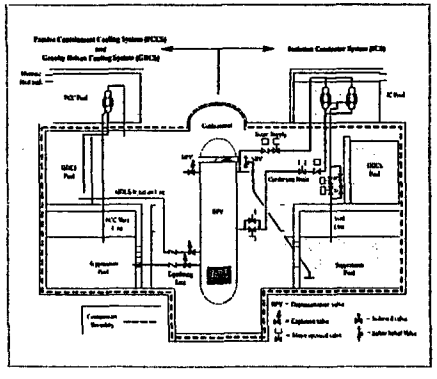


Advanced nuclear power ... ESBWR

Key Features



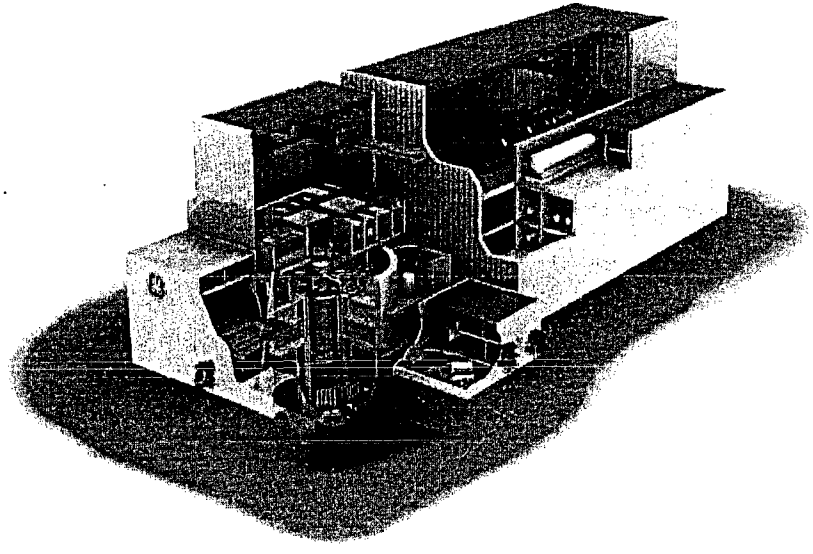
- Simplified Design
- Standard / Modular
- 36 month schedule *
- Capex down 15%
- Opex down 20%



- Improved safety
- Improved security
- Passive design
- Improved outages

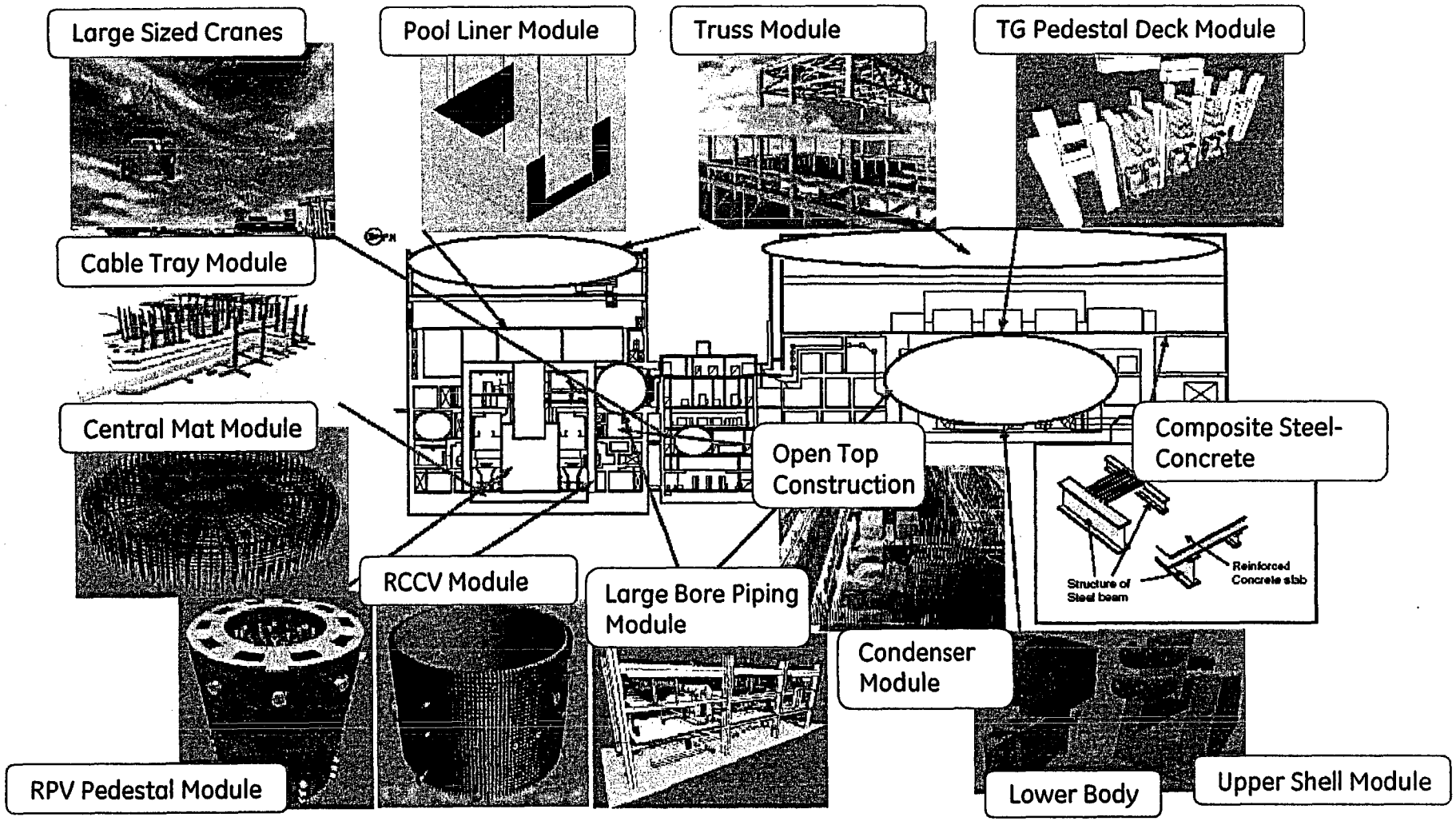
Deployment

- NRC DC submission complete
- Part of the US DOE 2010 Program
- Selected by NuStart, Entergy & Dominion
- On plan for 2007 COL applications

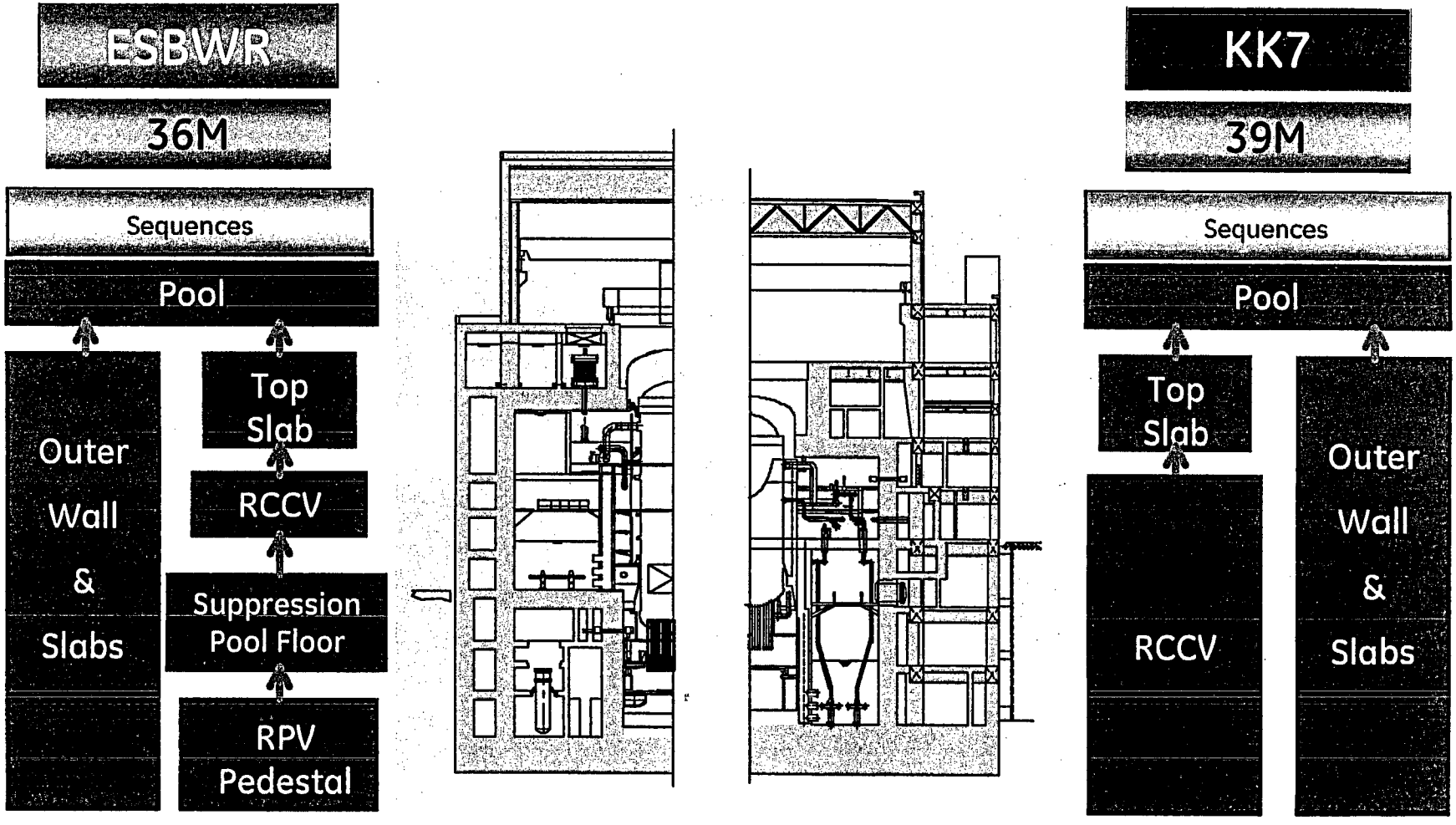


* From FSC to FL

Principal ESBWR Construction Methods

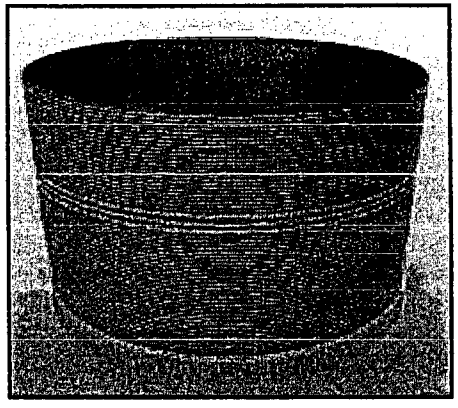


ESBWR vs. ABWR Comparison

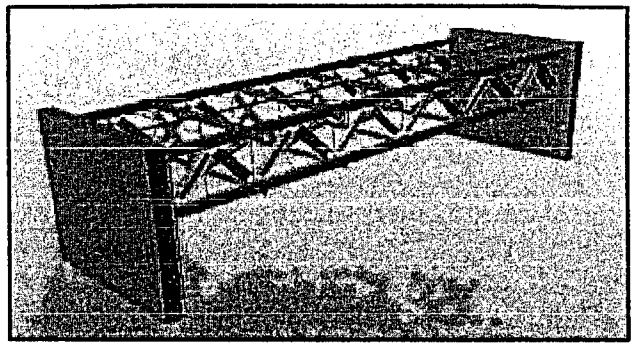


Advanced Construction Methods:
3D Models

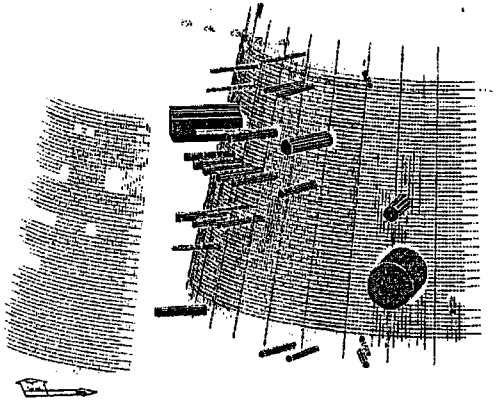
RCCV liner



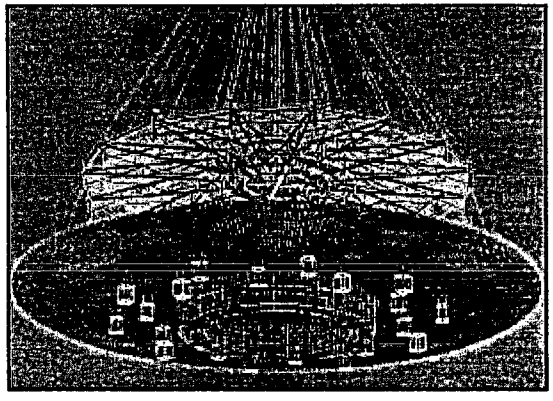
Roof Truss Steels



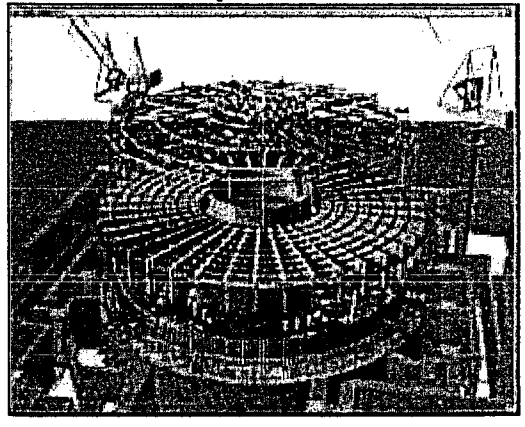
Rebars



Central Mat

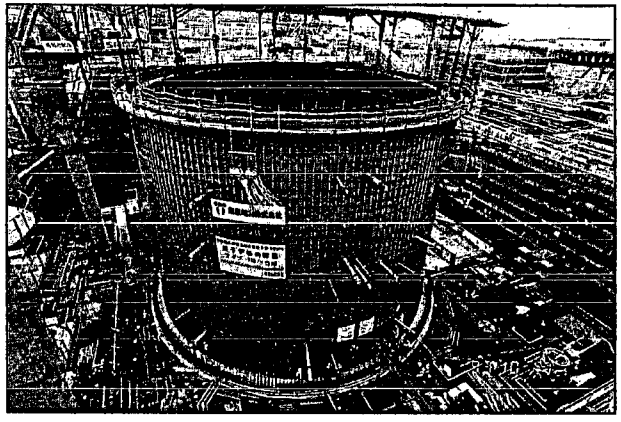


Top Slab

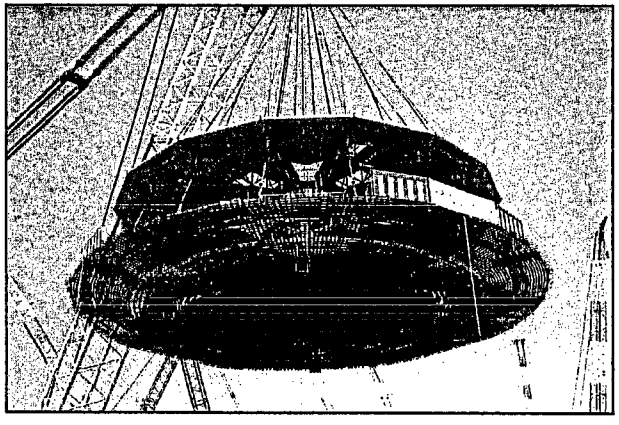


Advanced Construction Methods:
In Reality

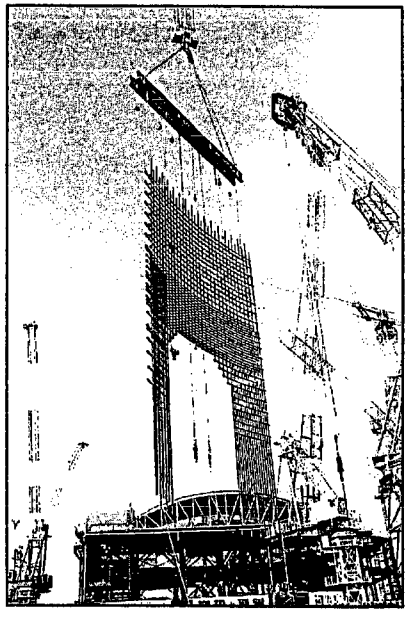
RCCV liner



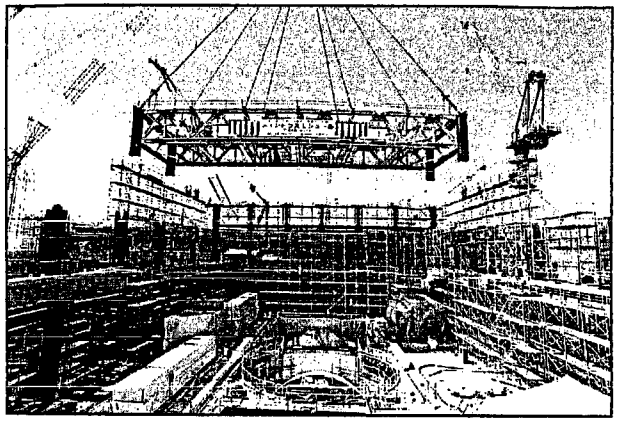
Central Mat



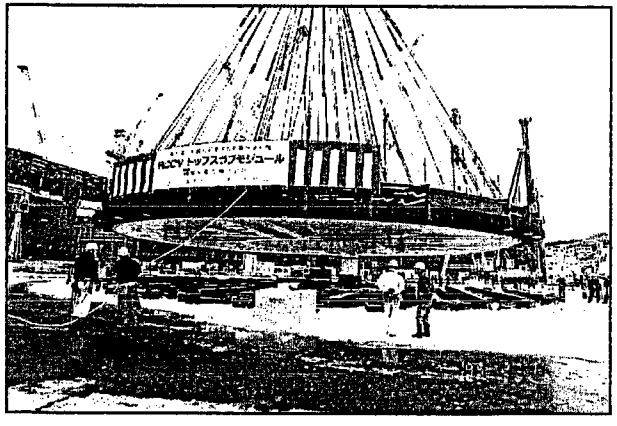
RCCV Rebars



Roof Truss Steels



Top Slab



Standardization

Engineering Design

- Enveloped designs
- Common components
- Design control and documentation
- Standardized components
- Common test procedures
- Identical systems, structures
- O&M procedures
- Construction plans and processes

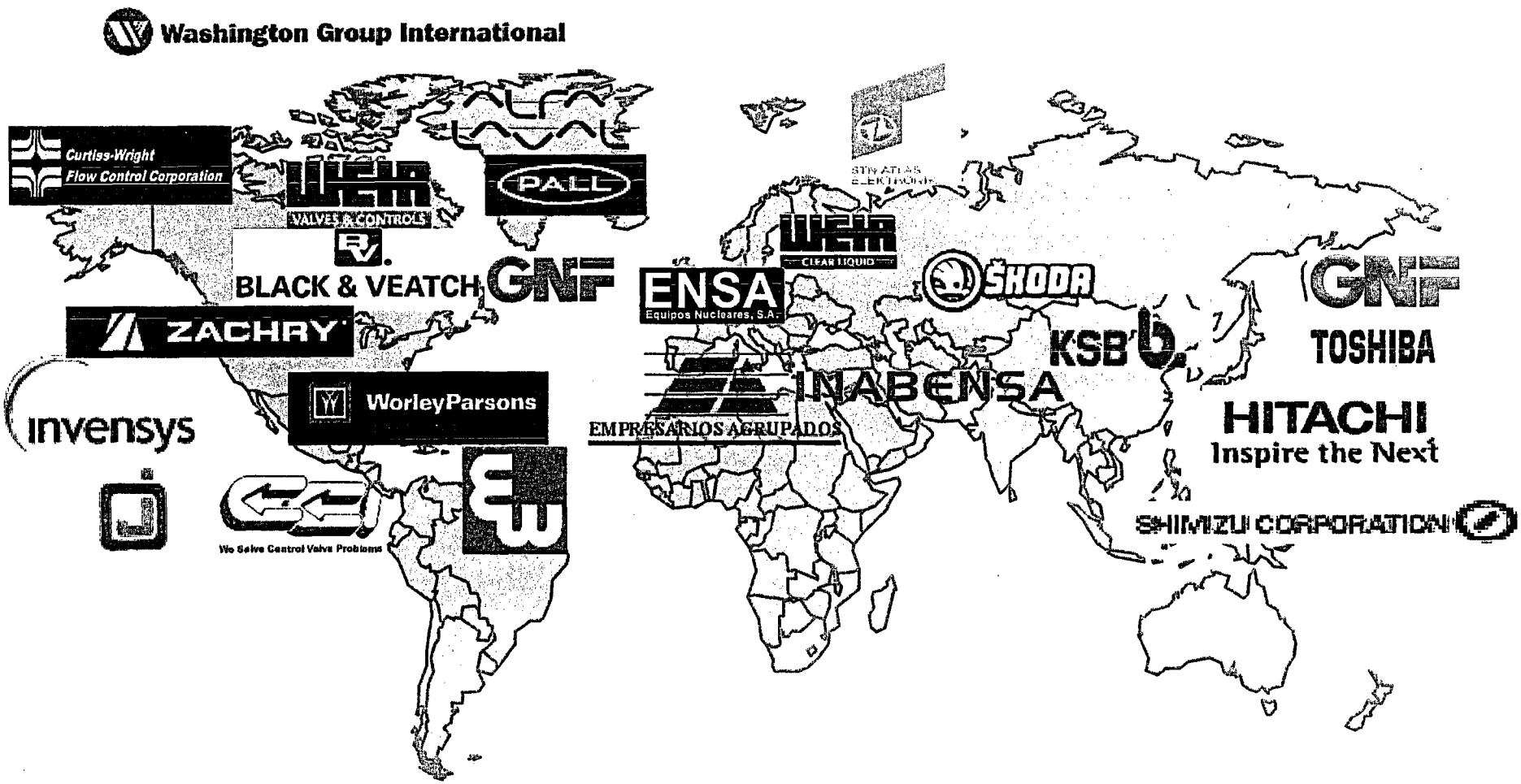
Project Controls

- Project Quality Plan
- Project Design Manual
- Project Procurement Plan
- Project Management Manual
- Project Schedule & Controls
- Engineering Operating Procedures (EOPs)
- Project Instructions (EPIs)

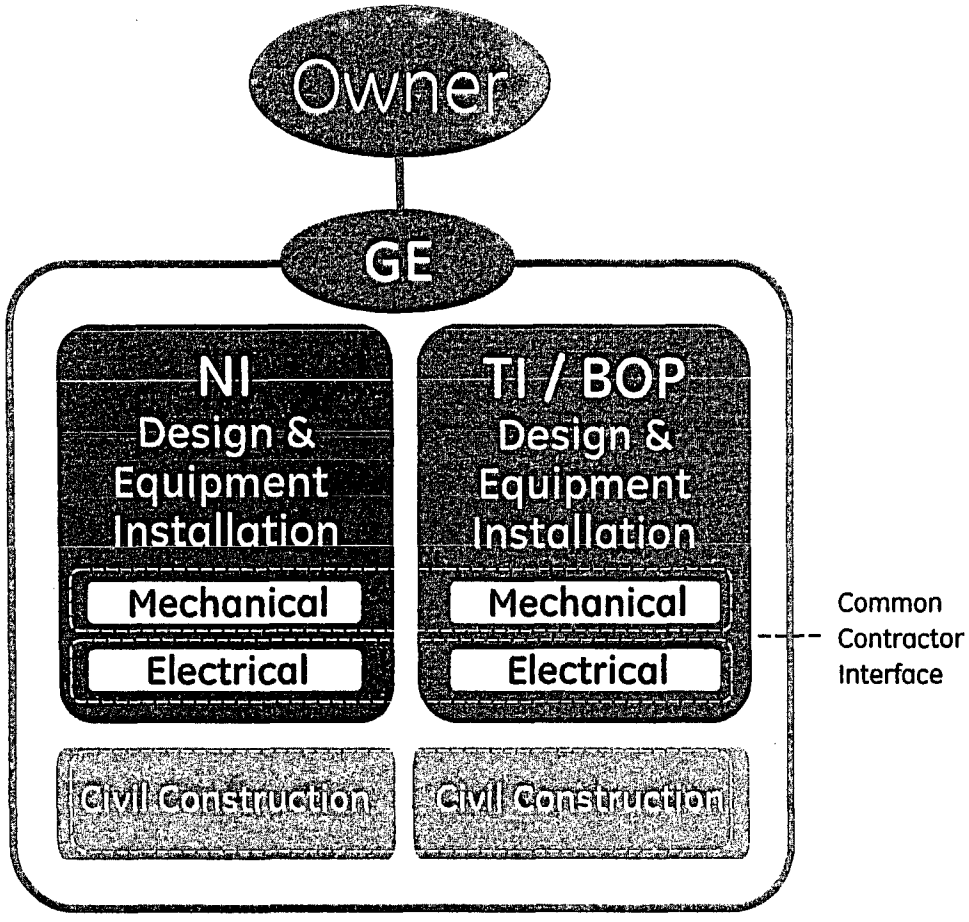
Documentation

- Project Specific Calculations
- Project Specific Design Record Files
- Equipment Requirements
- Key Supplier Documents
- Outgoing Customer Correspondence
- Text Type Engineering Documents
- Reports

GE's Qualified Suppliers



Project delivery structure

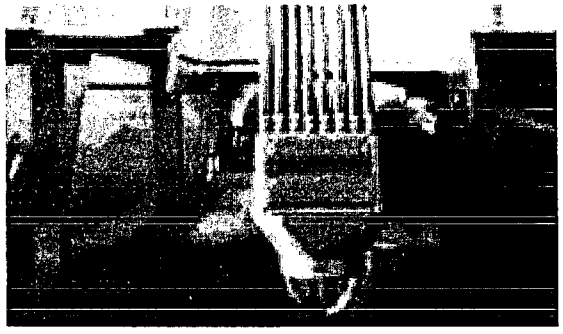


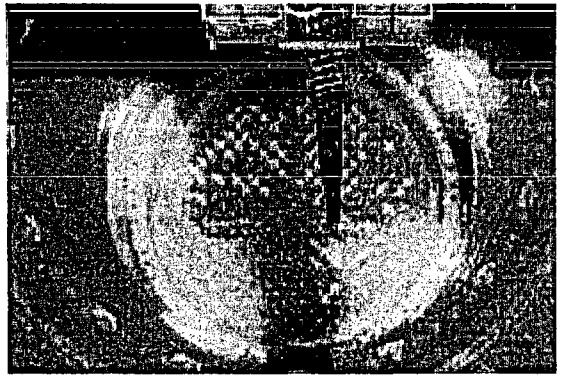
- PM = GE
- NI = GE + GE Team
- TI/BOP = GE &/Or Global Suppliers/Partners
- Civil Construction = Key partners identified
- M&E = Key partners identified

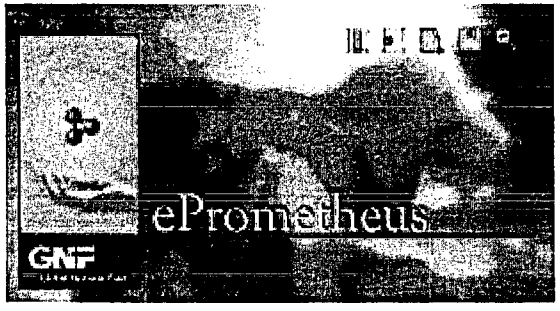
Highlights

- Owner signs a Prime Contract with GE, who manages subcontracts in closed consortium
- Collaborative Customer/GE model
  - Owner in key management positions
- Best approach to provide a Total Project solution:
  - Single interface point for customer
  - Total Project Management
  - Key project interfaces managed
  - Coordinated construction
  - Multiple project participants with risk sharing
- Contract terms to provide for reasonable risk share between GE and Owner
- Single interface point for Owner
- Developed & ready to deploy

Nuclear Fuels





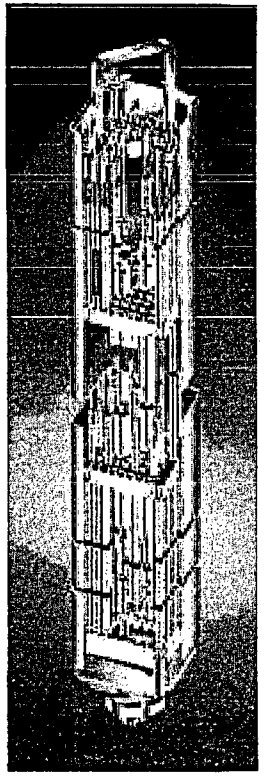


Fuel Products

- BWR & Candu Fuel:
  - Nuclear & Mechanical Design
  - Initial Core Loads
- MOX Fuel Supply (Japan)

Fuel Services

- Core Design
- Re-Load Design
- Technical Services
- Fuel Performance Optimization
- Monitoring & Diagnostic Services



BWR Bundles
- GE11/13/12/14
- GNF-2
- Next Generation

BWR Fuel

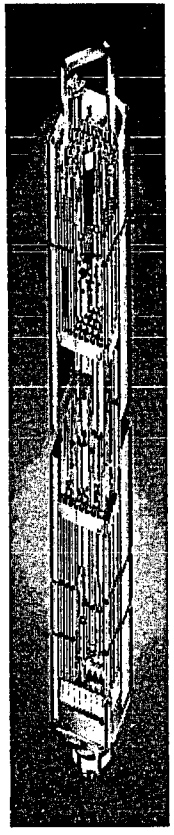
Defense in Depth

PCI/Duty

- Accurate, benchmarked, state-of-the-art methods
- High quality, PCI-resistant pellets
- Plant operator tools

Corrosion

- Maximum cladding corrosion resistant
- Real-time plant water chemistry monitoring (including high-risk fuel species)



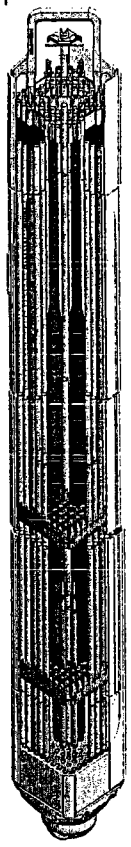
Debris

- Debris ingress prevention
- Improved cladding fret resistance (at spacer locations)

Manufacturing

- Robust manufacturing processes
- Best-in-class inspection systems
- Human performance

GNF2 Advantage™



Results

Operating Flexibility

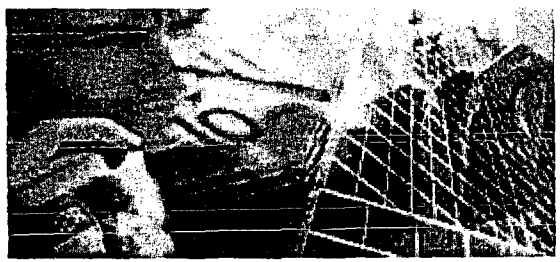
Increased Energy

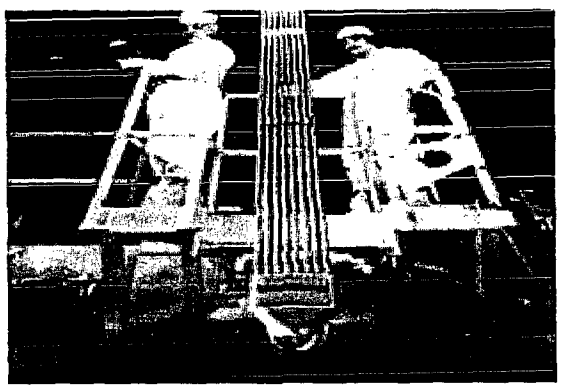
Reduced Fuel Cycle Costs

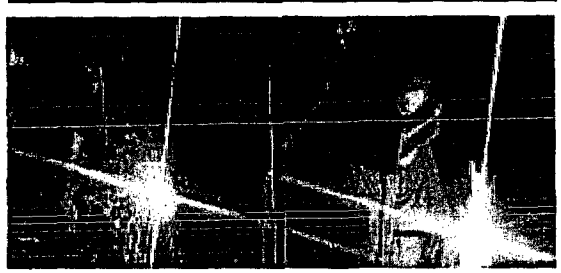
Reliability & Quality Enhancements

Committed to zero leaker reliability while meeting customers' performance needs

Nuclear Services





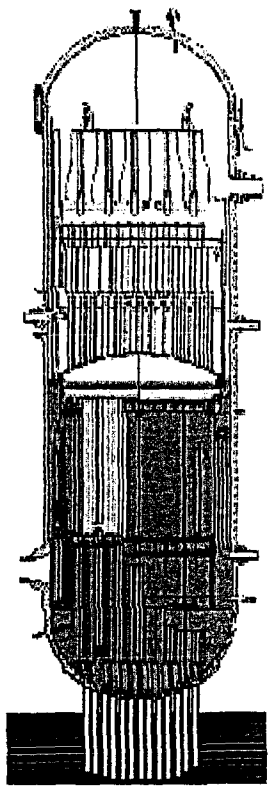


Performance Services

- Asset Enhancement Services
- Asset Protection Services
- Technical Services
- Electrical & Mechanical
- Controls
- Contractual Services

Reactor & Field Services

- Full Outage Services
- Inspection Services
- Reactor Modifications
- PWR Services
- Parts



Performance 20SM - Concept

A Tailored & Scalable Solution with Optimum Plant Performance and Customer Choice in Mind ...

Point of Arrival

3 **Optimize**

Plant Performance:
- M&D Package
- Performance Guarantees
- Multi-Year Agreement
- Asset Optimization

2 **Solve**

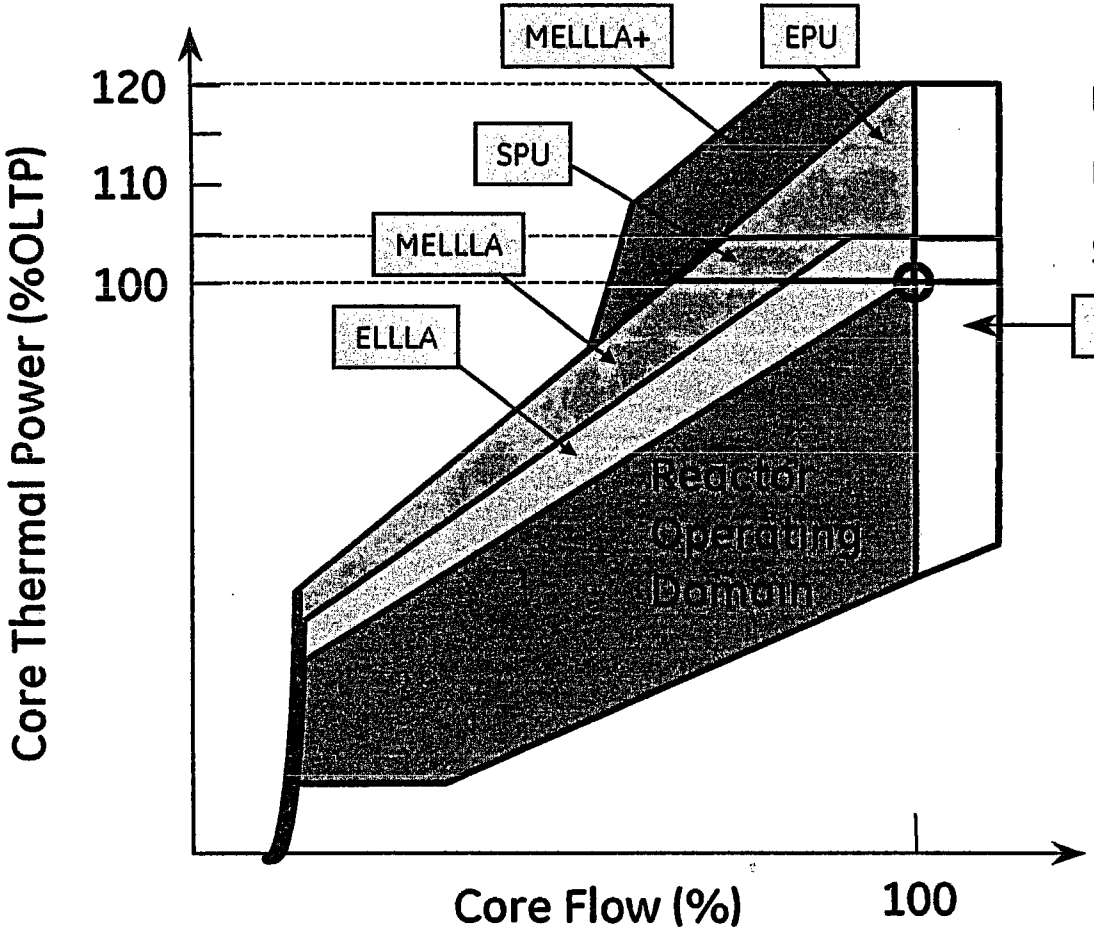
Plant Improvements:
- Replace
- Repair
- Upgrade
- Uprate

1 **Evaluate**

Plant Baseline:
- Business Strategy
- Nuclear Island
- Turbine Island
- Balance of Plant

Fleet • Plant • System • Equipment • Component

Increasing Operational Flexibility



MELLLA+ = MELLLA Plus

EPU = Extended Power Uprate

SPU = Stretch Power Uprate

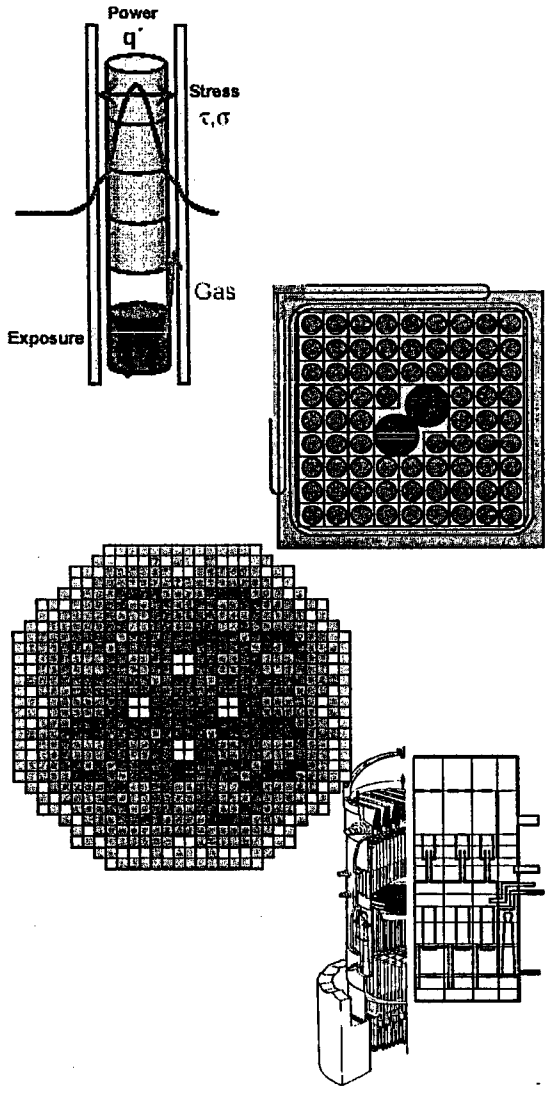
MELLLA = Max. Ext. Load Line Limit Analysis

ICF = Increased Core Flow

ELLLA = Extended Load Line Limit Analysis

OLTP = Original Licensed Thermal Power

Methods Analysis Platforms



PRIME

Fuel rod thermal-mechanical

Mechanical behavior of fuel rod.

LANCER

2-D Lattice Physics

Nuclear Behavior of Fuel Rods Within Bundle.

AETNA

3-D Core Simulation

Nuclear + Thermal-Hydraulic Behavior of Bundles in Core

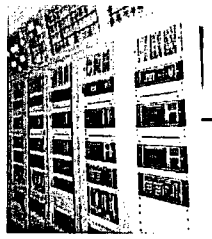
TRACG

Coupled Core and BOP Simulation

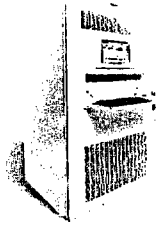
Best Estimate Analysis of Operational Transients

imagination at work

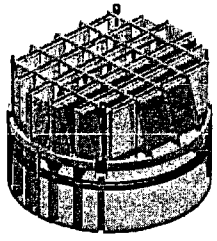
Digital Controls



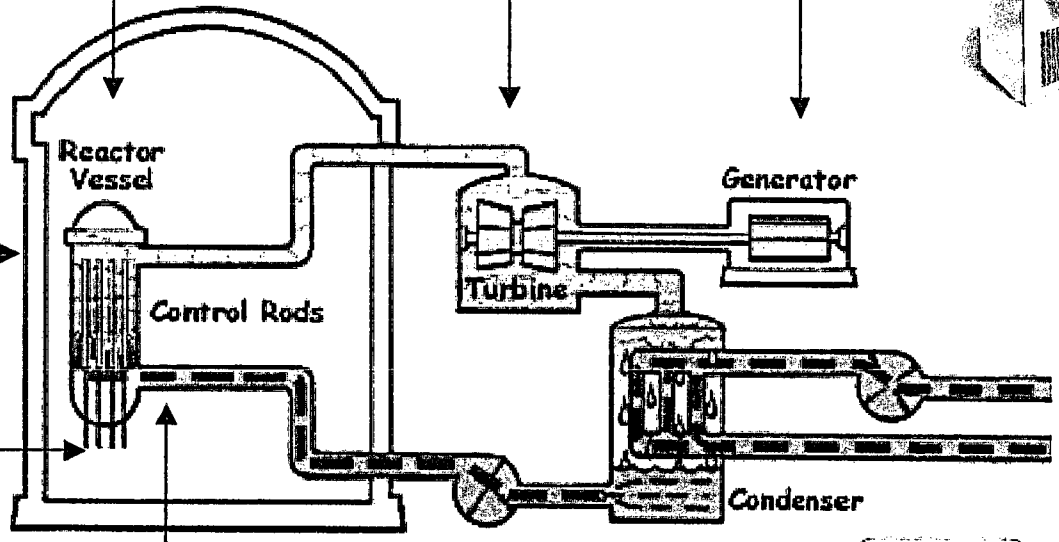
- Nuclear Measurement Analysis & Control



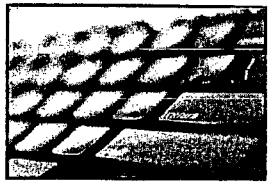
- Mark VIe Control Platform

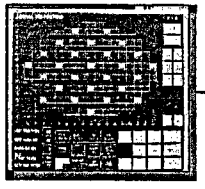


- Plant Monitoring & Diagnostics

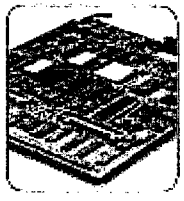


- Education and Training

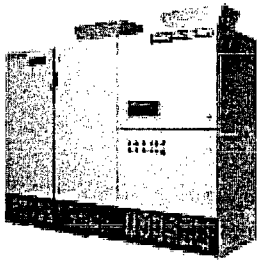




- Rod Control Management System



- Electronic Service Program (ESP)
- Spare Parts

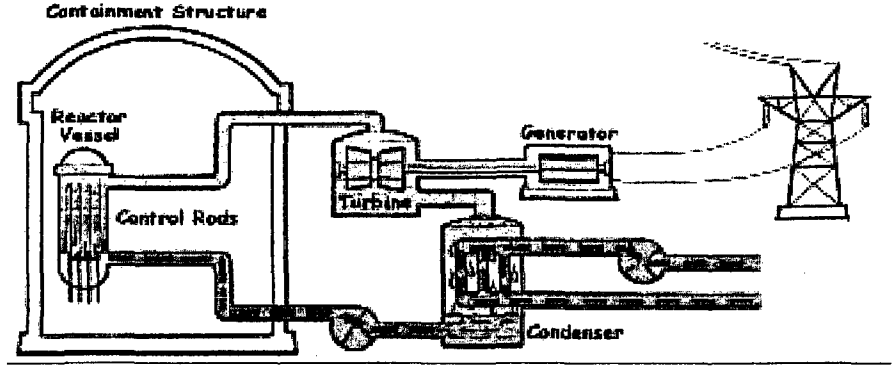


- Adjustable Speed Drives
  - Recirculation Pumps
  - Feedwater Pumps
  - Circulating Water

WaterCare

Primary

- Hydrogen Water Chemistry
- NobleChem (License + App'n)
- DZO (License)



BOP

- Makeup Water Equipment
- Treatment / Addititives / Filtration
- Scale, fouling & corrosion control
- Demineralized Water

- **Primary+ BOP** offerings
- **On Line M&D** solution for continuous monitoring of more species during Start Up, Operation, Transients and Shut Down

- Long term support ... based on:
  - Water quality + structural integrity + fuel protection
  - M&D ... simplified operations ... improved control

Total plant solution

imagination at work

Reactor Services

Outages

Outage Services
Refueling
Outage Tools

Reactor Parts

Control Rod Drive
Marathon Control Rod Blades
Reactor Internal Hardware

Modifications

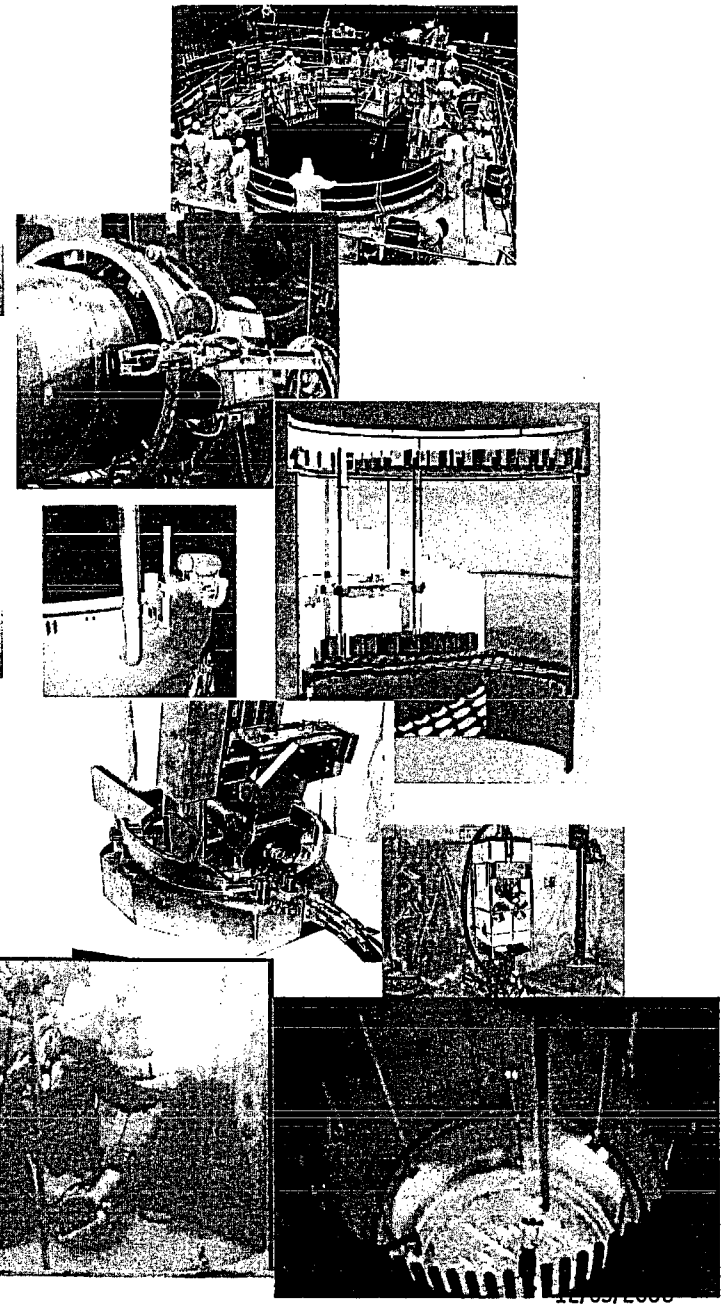
Emergent Modifications/Repairs
In-vessel
NSSS (out of vessel)

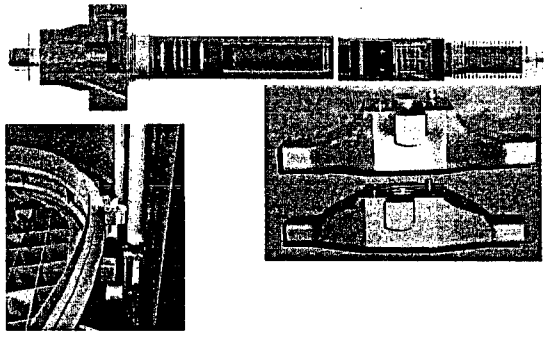
Inspections

Visual Inspections
UT/ET Inspections
Remote Automated Tools

Specialty Projects

Suction Strainers
Dry Cask Services





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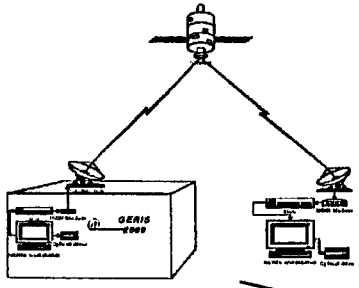
NPI



Low Duty Control Rod Blade

Phased Array TWS

Jet Pump Inspection Tooling

IVVI Digitization / Remote Data Analysis

Invader – IVVI Remote Tooling

Inside RPV Inspection System -replace GERIS ID

CRDH Inspection System

PWR Inconel Welding

PWR Piping Inspections

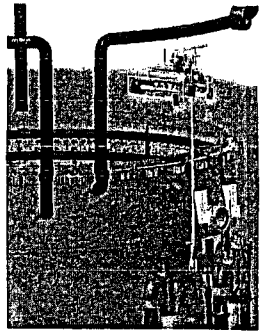
PWR Suction Strainers

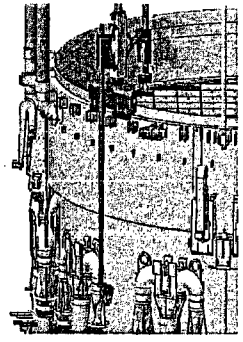
PWR Vessel Inspections

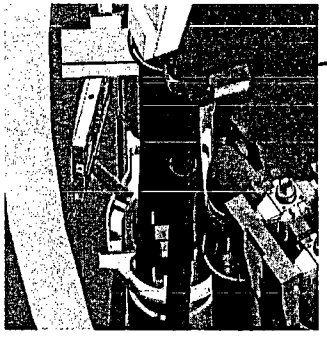
SLDES Improvements

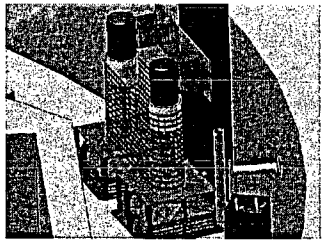
Bundle Shuffle Machine

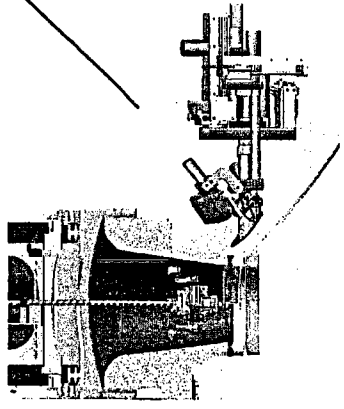
Next Gen BEDS











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