

















Royal Sonesta Harbor Court Hotel Baltimore, Maryland September 19, 2012

### Welcome

- Safety Message
- Introductions
- Opening remarks
  - NRC (Bill Dean)
  - CENG (Maria Korsnick)











## Welcome and Agenda

Opening Remarks and Introductions • Luncheon	Maria Korsnick, Bill Dean	11:30 am
CENG Overview	Brew Barron	12:15 pm
<ul> <li>CENG Performance and Regulatory Update</li> <li>Fleet operational performance</li> <li>Regulatory initiatives</li> <li>Post-Fukushima initiatives</li> </ul>	Maria Korsnick Sam Belcher NRC	12:30 pm
BREAK	2:00 pm	
<ul><li>CENG Performance and Regulatory Update (continued)</li><li>Spent fuel storage strategy</li><li>Nuclear Safety Culture Oversight</li></ul>	Jim Spina NRC	2:15 pm
<ul> <li>CENG Station Performance and Focus Areas</li> <li>Calvert Cliffs</li> <li>Nine Mile Point</li> <li>Ginna</li> <li>NRC comments/questions</li> </ul>	George Gellrich Ken Langdon Joe Pacher Bill Dean	2:45 pm
BREAK		3:30 pm
<ul> <li>NRC Comments and Perspectives</li> <li>Region I</li> <li>Nuclear Reactor Regulation</li> <li>Nuclear Security and Incident Response</li> <li>NRC Executive Director for Operations</li> </ul>	Bill Dean Eric Leeds Jim Wiggins Mike Johnson	3:45 pm
Closing Remarks & Adjourn		4:45 pm



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## **CENG Overview**

Brew Barron
President and CEO

### **Exelon-Constellation Merger**

- Exelon is now a member of CENG Joint Venture with EDF
  - CENG is a Board-Managed JV, with member authorities limited to designation of board members
  - Governance changes affecting decision-making require prior NRC approval
- CENG remains in Baltimore
  - Exelon Nuclear organization relocating its headquarters to Kennett Square, PA
- Merger presents learning opportunities/synergies
  - Exelon: largest fleet operator in US, third in the world
  - EDF: largest fleet operator in the world



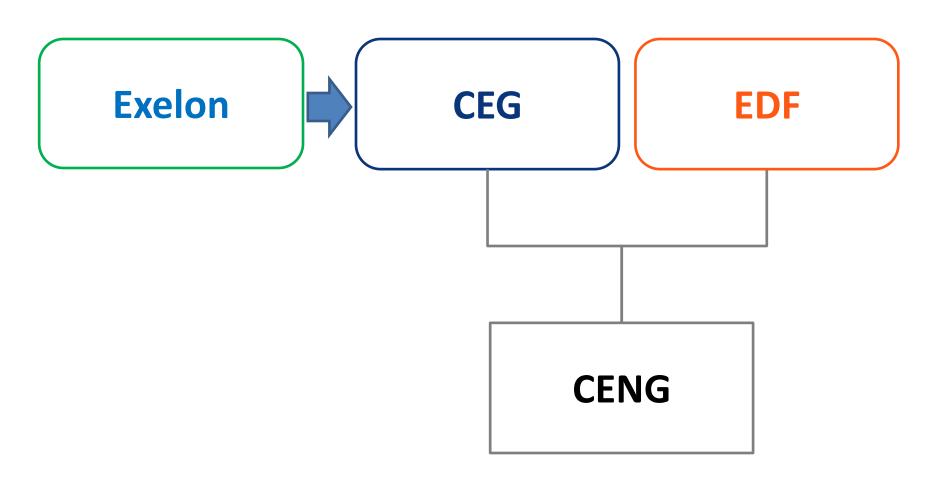








## Constellation and Exelon Merger





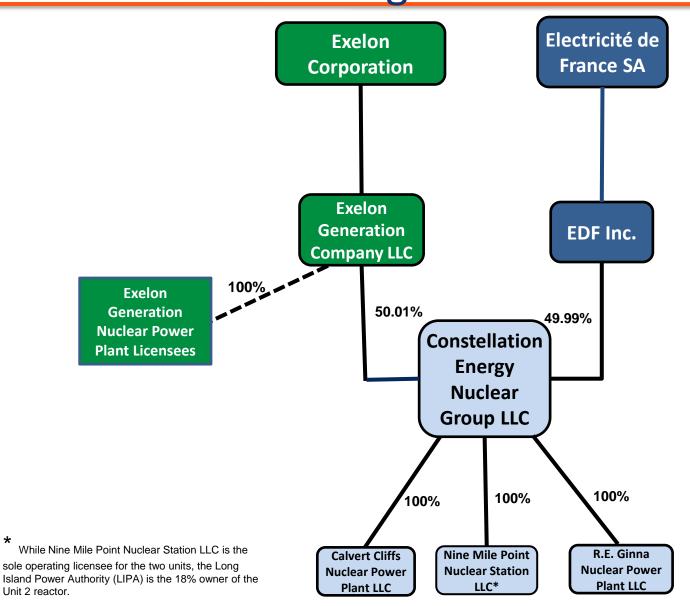




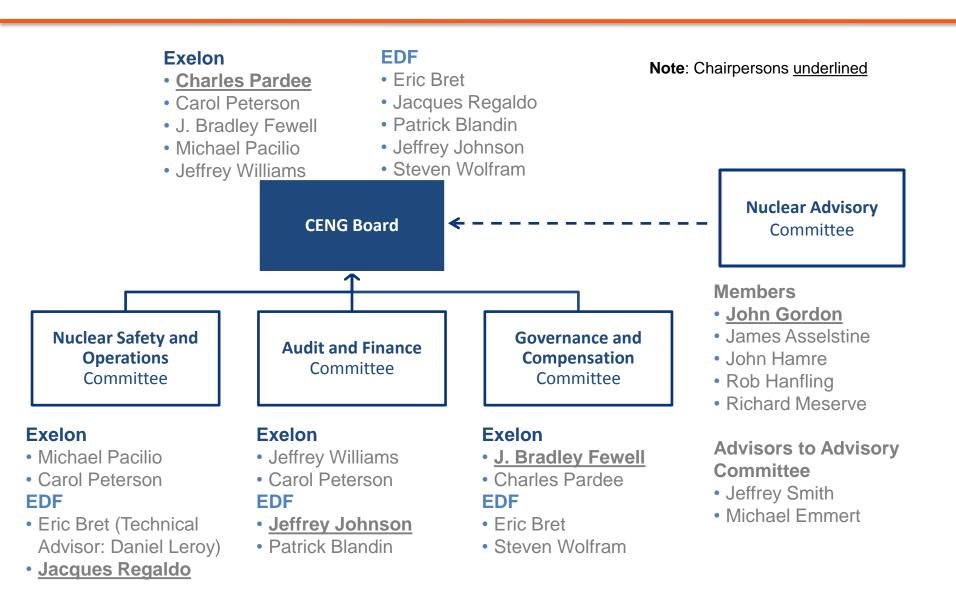




## Simplified CENG Organizational Chart – Post Exelon-CEG Merger



### **CENG Governance structure**



## **CENG Leadership Team**





















Maria Korsnick Chief Nuclear Officer, SVP-COO

## **CENG Strategic Business Model**

#### **VISION**

To be a recognized U.S. leader in competitive electric generation and safe operation of nuclear power plants.

#### **MISSION**

We generate value for our investors, customers, employees & communities through the safe, reliable, efficient & environmentally friendly use of nuclear power.

#### **VALUES**

Nuclear Safety
Personal Safety
Integrity
Community Commitment
Teamwork
Continuous Improvement
Active Accountability

STRATEGIC THEMES						
	SAFETY EXCELLENCE	OPERATIONAL EXCELLENCE	ENGAGED WORKFORCE	FINANCIAL PERFORMANCE		
Strategic Destinations	<ul> <li>Excellence in Nuclear Safety</li> <li>Top Quartile Personal Safety</li> <li>Excellence in Environmental Management</li> </ul>	<ul> <li>Top Quartile Fleet in         Energy Generation</li> <li>Industry Excellence</li> <li>Best in Class         Outage Performance</li> <li>Excellence in         Performance         Improvement</li> </ul>	<ul> <li>Strong Nuclear         Safety Culture     </li> <li>Improvement in             Worker Engagement</li> <li>Effective and             Sustained Leadership</li> <li>Open and Effective         Communication     </li> </ul>	<ul> <li>Top Quartile         Controllable Costs</li> <li>Delivering Reliable         Business Results</li> <li>Delivering Reliable         Partner Distributions</li> </ul>		

Fleet Governance & Oversight Internal Assessment



Industry Benchmarking



External Assessment

STRATEGIC INITIATIVES

Nuclear Safety & Security Personal Safety Excellence

Operational Excellence Performance Improvement

Equipment Reliability

Organizational Effectiveness

**5-Year Business Plan** 

Business Planning

### 2011-2012 CENG Accomplishments

#### Key achievements since our last meeting in July 2011:

#### Licensing

 Successful NRC Acceptance Review for the Nine Mile Point Unit 1 NFPA-805 fire protection submittal

#### <u>Inspections and Regulatory Performance</u>

- Completed successful Triennial Fire Protection inspection at Nine Mile Point
- Conducted successful Component Design Basis Inspection at Calvert Cliffs with learnings in the area of data retrieval
- Returned all CENG reactors to the Licensee Response Column in the NRC Reactor Oversight Process

#### <u>Training and Human Performance</u>

Received three training accreditation renewals with unanimous approval











### 2011-2012 CENG Accomplishments (cont'd)

#### Nuclear Security and Incident Response

- Conducted a successful Force-on-Force exercise at Nine Mile Point
- Continued successful implementation of emergency preparedness and cyber security rule requirements on or ahead of schedule
- Received NRC approval for revised Emergency Action Level schemes at Calvert Cliffs and Nine Mile Point
- Completed implementation of our Calvert Cliffs emergency preparedness "e-Docs" library for NRC Region I, with plans to implement fleet-wide
- Completed NRC-graded integrated emergency preparedness exercises at all three stations with no NRC findings
- Provided significant leadership to formulate industry's response to the Fukushima event



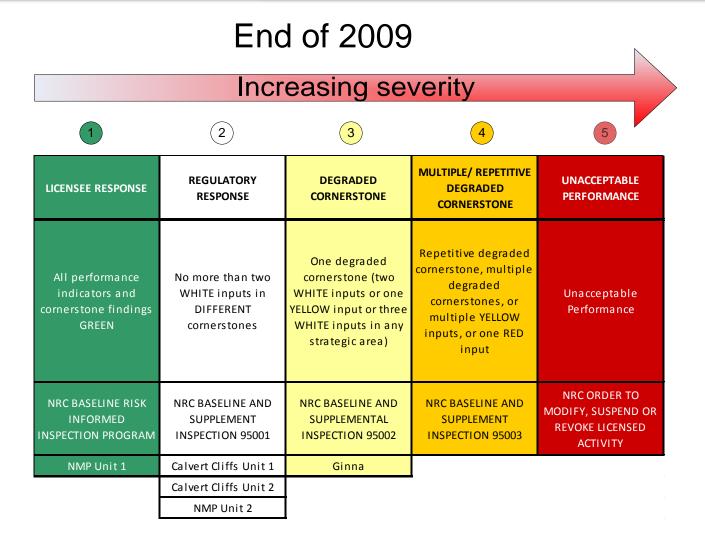








## Reactor Oversight Process (ROP) Status



## **CENG** Response to NRC Inspection Findings

- We:
  - Embrace ALL inspection results as learning opportunity
  - View cross-cutting issues as leading indicators of performance trends
  - Act to understand and correct the underlying causes of these trends

 CENG uses an internal ROP Oversight Committee (ROC) at each site to look closely at current and projected trends and vulnerabilities in each cornerstone and cross-cutting

area/aspect

Area	Components	Aspects	3011	4011	1012	2012	Totals	20
Alea	Components	Systematic Process H.1.(a)	30211	4011	10212	20212	TOTAL	362
	Decision Making	Assumptions H.1.(a)		С	F	_	3	_
		Communications H.1.(d)	A	С	F		0	_
		Backlogs H.2.(a)		_	_	_	Ö	-
	Résources	Training H.2.(b)		_	_	_	Ö	-
		Documentation H.2.(c)			G	LJ	3	
Human Performance						1,3	0	-
		Facilities and Equipment H.2.(d)					-	Ш
	Work Control	Planning H.3.(a)					0	
		Coordination H.3.(b)					0	ш
		Prevention H.4.(a)					0	_
	Work Practices	Expectations H.4.(b)		D,E			2	
		Oversight H.4.(c)					0	
		I desirente Paris		10	tal		8	_
		Identification P.1.(a) Trending P.1.(b)					0	_
	Corrective Action Program	Evaluation P.1.(c)					0	_
		Corrective Action P.1.(d)				н	1	-
Problem Identification &		Alternative Process P.1.(e)			_	н	0	$\vdash$
Resolution	Operating Experience	Evaluation P.2.(a)			_	_	0	Н
Nesolution		Implementation P.2.(b)	В	_	_	_	-	$\vdash$
	Self & Independent Assessment	Performance P.3.(a)			_	_	ė	-
		Indicators P.3.(b)					Ö	-
		Communication P.3.(c)			_	_	ő	-
				To	tal	_	2	
	Environment for Raising Concerns	Behaviors S.1.(a)					Õ	
		Alternative Processes S.1.(b)					0	$\vdash$
Safety Conscious Work Environment							_	L
	Preventing, Detecting, & Mitigating Retailation	Training S.2.(a)					0	
Entro Millont		Investigation S.2.(b)					0	
		Chilling Effect of Personnel Actions S.2.(c)		l	l	l	0	
		Actions S.2.(c)			tal			_
		·		- 10	/LBI		0	

## Reactor Oversight Process (ROP) Status

#### August 2012 Increasing severity 2) 3 **MULTIPLE/ REPETITIVE DEGRADED** REGULATORY **UNACCEPTABLE** LICENSEE RESPONSE **DEGRADED** CORNERSTONE RESPONSE **PERFORMANCE** CORNERSTONE One degraded Repetitive degraded All performance cornerstone (two No more than two cornerstone, multiple indicators and WHITE inputs or one Unacceptable degraded cornerstones, WHITE inputs in YELLOW input or three cornerstone findings Performance or multiple YELLOW **DIFFERENT** cornerstones **GREEN** WHITE inputs in any inputs, or one RED input strategic area) NRC BASELINE RISK NRC BASELINE AND NRC BASELINE AND **NRC BASELINE AND** NRC ORDER TO MODIFY, INFORMED INSPECTION **SUPPLEMENT** SUPPLEMENTAL SUPPLEMENT SUSPEND OR REVOKE **PROGRAM INSPECTION 95001 INSPECTION 95002 INSPECTION 95003** LICENSED ACTIVITY Calvert Cliffs Unit 1 Calvert Cliffs Unit 2 NMP Unit 1 NMP Unit 2 Ginna

71

25

6

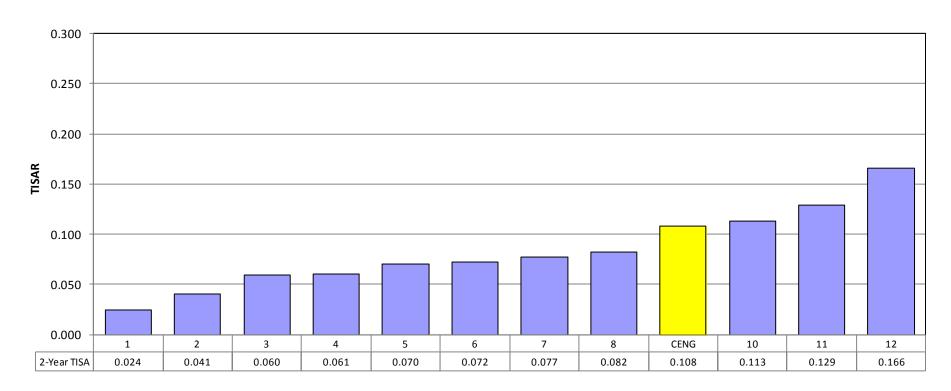
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# of US Reactors

## Industry Benchmark: Fleet 2-Year Total Industrial Safety Accident Rate (TISAR) (Q2 2012)

#### 2-Year Total Industry Safety Accident Rate (TISAR) (through Q2 2012)







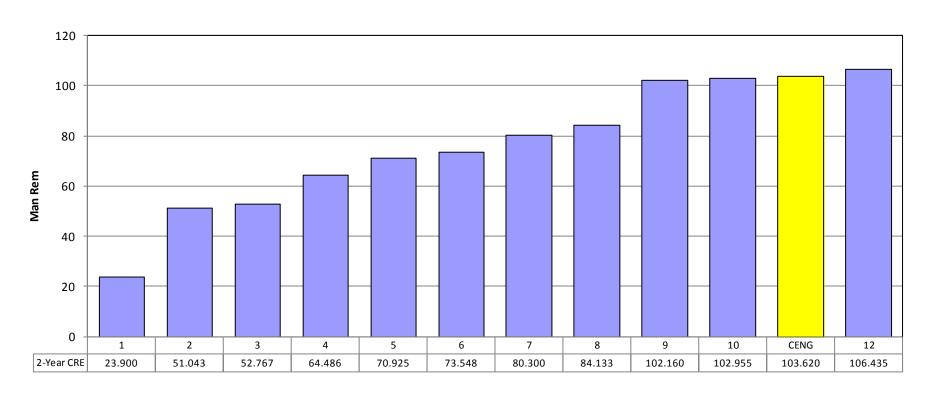






## Industry Benchmark: Fleet 2-Year Collective Radiation Exposure (Q2 2012)

#### 2-Year CRE (Man-Rem) (through Q2 2012)





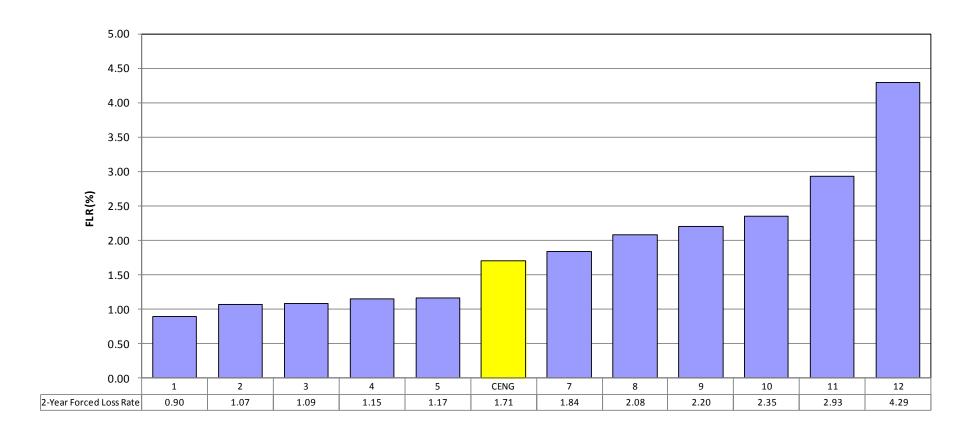








## Industry Benchmark: 2 Year Forced Loss Rate (Q2 2012)





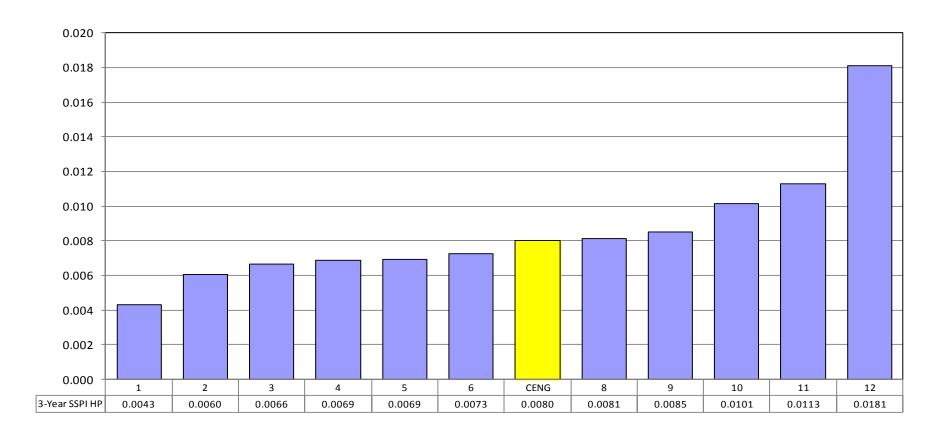








## Industry Benchmark: 3-Year Safety System Performance Indicator - High Pressure (Q2 2012)





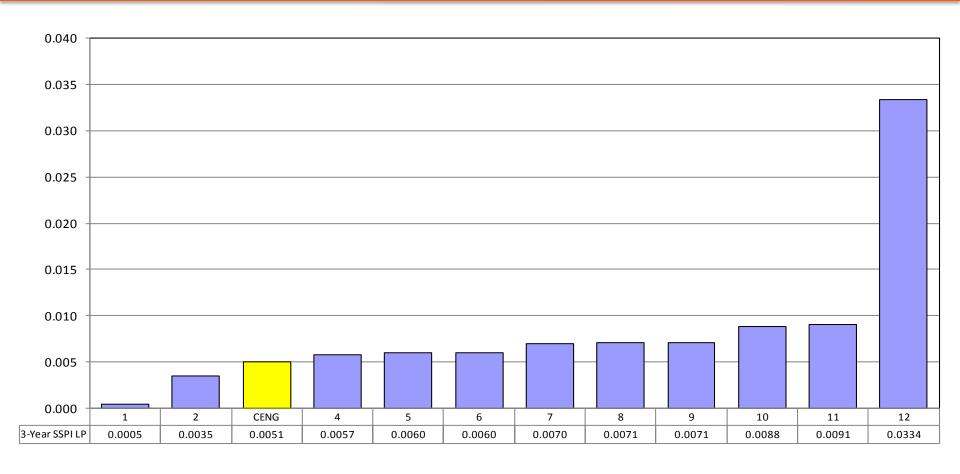








## Industry Benchmark: 3-Year Safety System Performance Indicator – Low Pressure (Q2 2012)





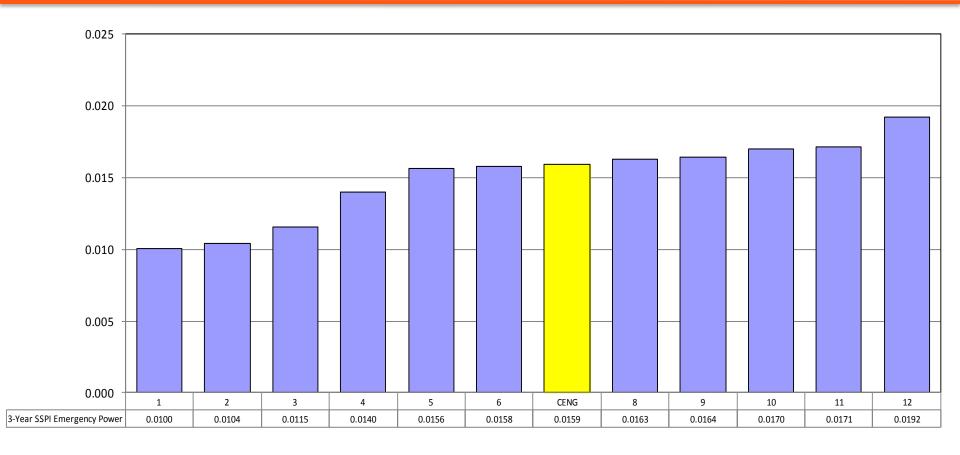








## Industry Benchmark: 3-Year Safety System Performance Indicator – Emergency Power (Q2 2012)













### Conclusions

- CENG regulatory performance remains acceptable with strong inspection results and active response to all NRC inspection findings and observations
- CENG continues to implement regulatory commitments and new rules on schedule
- CENG forward focus is on improving industrial safety, forced loss rate, asset optimization, and leadership team alignment



























## Regulatory Initiatives

Sam Belcher
Senior Vice President
Site Operations

## Containment Sump (GSI-191 Resolution)

#### Plan and Schedule

- Calvert Cliffs:
  - Limited insulation replacement during 2013 and 2014 RFOs (small bore piping containing mineral wool insulation)
  - Combination of risk and deterministic basis approach for suction strainer and in-vessel effects (SECY 12-093, Option 2)

#### Ginna:

- Insulation banding in fall 2012 RFO (resolves outstanding suction strainer issues)
- Risk-based approach for in-vessel effects (SECY 12-093 Option 3)
- Plan and schedule consistent with SECY 12-093, "Closure Options for Generic Safety Issue-191, Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance"











### NFPA-805 Implementation

- Plan and Schedule
  - NMP 1 submittal June 29, 2012 (complete)
  - NMP 2 to remain Appendix R compliant
  - Ginna submittal March 29, 2013 (on track)
  - CCNPP 1&2 submittal September 30, 2013 (on track)
- NMP1 transition license amendment request through NRC Acceptance Review with no RAI's











## **Cyber Security Rule**

#	Commitment Summary	Due Date	Status / Actual Completion
1	Establish Cyber Security Assessment Team	12/31/2012	Completed (Jan 2011)
2	Identify Critical Systems and Critical Digital Assets(CDAs)	12/31/2012	Completed (Jan 2011)
3	Installation of a deterministic one-way device between lower level devices (levels 0 1,2) and the higher level devices (levels 3,4) (Data Diode or Air Gap)	12/31/2012	Completed (Feb 2012)
4	Access Control For Portable and Mobile Devices will be implemented.	12/31/2012	Completed (July 2012)
5	Implement observation and identification of obvious cyber related tampering to existing insider mitigation rounds .	12/31/2012	Completed (Feb 2012)
6	Address Cyber Security Controls for Target Set(TS) CDAs.	12/31/2012	NA, no TS CDA
7	Ongoing monitoring and assessment activities commence for Target Set CDAs/	12/31/2012	NA, no TS CDAs
8	Full Implementation of the CENG Cyber Security Program	02/26/2016	In process.











## **Emergency Preparedness Rule**

- Initial actions required by new rule are complete:
  - Revise procedures for maintaining the NRC-approved Emergency Plan (50.54q)
  - Emergency Action Level (EAL) declaration timeliness
  - Onsite protective actions (for hostile action)
  - Alternate Emergency Response Facility (staging)
  - EALs for hostile action











## **Emergency Preparedness Rule**

- Key upcoming actions:
  - Complete on-shift staffing analyses
  - Complete updated Evacuation Time Estimates
  - Identify backup alert and notification method and submit revised Alert and Notification System (ANS) report to FEMA
  - Prepare for hostile action based drills
  - Implement Alternate Emergency Response Facilities
- CENG sees no significant obstacles to timely implementation of the new rule











## Fukushima-Related Project Activities

CENG on track for near-term submittals:

Communications assessment
 October 31, 2012

Flooding and seismic walk-down results
 November 28, 2012

Integrated plans in response to orders
 February 28, 2013

Flooding re-evaluations for CCNPP, NMP March 12, 2013

- CENG project staffing 24 Full-Time Equivalent Employees
  - CENG has obtained ten contractors to provide specialized services in the areas of seismic, flooding, staffing, risk management and scoping engineering for modifications











## Fukushima-Related Project Activities (cont.)

#### Recent results of interest:

- Calvert Cliffs/NMP: initial flooding reviews underway due to association with new reactor projects
- Ginna: value of protected condensate storage tank for proposed dedicated diesel-generator powered auxiliary feedwater pump train
- NMP: decision to form a BWR Mark II "Users' Group" to jointly develop an approach to establish a reliable hardened vent configuration and strategy for the Mark II plants













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# CENG Used Fuel Management

Jim Spina
Vice President
Corporate Site Operations

## **Used Fuel Storage Update**

- An Independent Spent Fuel Storage Installation (ISFSI) is in operation at all three CENG sites:
  - NMP ISFSI completed pre-operational inspections and loading first canister September 2012
  - Ginna ISFSI operational 2010, six canisters loaded
  - Calvert ISFSI will have 72 canisters loaded by end of 2012
    - ISFSI license renewal under review at NRC
    - Application to use newer (Model 32PHB) canister and increase the allowed number of Horizon Storage Modules under review at NRC
- CENG views recent court decision on NRC waste confidence rule as not impacting any of our used fuelrelated activities











## **CENG ISFSI Operations**

Calvert Cliffs horizontal storage module (HSM) and transfer cask





Ginna/NMP self propelled modular transporter



















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# Oversight of Nuclear Safety Culture

Jim Spina
Vice President
Corporate Site Operations

## **Nuclear Safety Culture Monitoring**

- CENG began continuous NSC monitoring in 2010 in response to a decision by industry CNO's to implement NEI 09-07
- CENG program under NEI 09-07, "Fostering a Strong Nuclear Safety Culture"
  - NSC Monitoring Panel: continuous monitoring at stations looking for 'faint signals'
  - Quarterly station and fleet roll-up NSC oversight meetings
  - Biennial industry peer assessments by via Utility Services Alliance (USA)
- NRC and industry continue efforts to develop a common language
  - 10 attributes vs. INPO's 8 principles/NRC's 13 aspects



























**Site Vice Presidents** 













#### Calvert Cliffs Overview







- Accomplishments
- Ongoing Improvements
- Ongoing Regulatory/Licensing Initiatives
- Station Focus Areas



#### Calvert Cliffs 2011-2012 Accomplishments

#### Since our last meeting in July 2011 we improved nuclear safety and security:

- Reduced likelihood of initiating events
  - Repaired roof leaks
  - Main generator rotor rewind (Unit 1)
  - Improved operator performance: fundamentals and questioning attitude
- Improved fission product barrier performance
  - Continued transition to AREVA fuel
  - Replaced Unit 1 pressurizer heater sleeves (Alloy 600 program)
  - Replaced Unit 1 condenser tubes (titanium), improving steam generator long term health
- Improved occupational radiological safety
  - Reduced source term and improved online and offline ALARA performance
- Improved safety system performance
  - Improved the health of several systems important to safety
- Improved performance in security and safeguards
  - Established best practices in safeguards information storage and control
- Reaffirmed ability to protect the public in an emergency
  - Completed successful biennial graded emergency exercise with no findings
- Completed successful Component Design Basis Inspection
  - Realized the need for improvements in design document retrieval











#### Ongoing Improvements 2012-2014

#### We will continue to improve nuclear safety and security:

- Reduce likelihood of initiating events from plant transients
  - Replace plant process computers
  - Continue building roof replacements
  - Improve main feedwater pump controls
  - Rewind Unit 2 main generator
- Improve safety system performance
  - Diesel Generator excellence team
  - Design document retrieval
  - Implement decision-making lessons learned from Unit 1 RCS leaks
- Further enhance ability to protect the public in an emergency
  - Replace radiation monitors
  - Implement NRC-approved EALs based on NEI 99-01, Rev. 5











#### Ongoing Regulatory/Licensing Initiatives

- AREVA fuel transition: resolve remaining license conditions (application at NRC)
- ISFSI: renew operating license, gain approval for use of upgraded (Model 32PHB) dry storage canisters (applications at NRC)
- Complete NFPA-805 analyses (October 2013 submittal)











#### Calvert Cliffs 2012 Station Focus Areas

#### Leadership and Accountability

- Clear performance expectations and metrics
- Structured processes and touch points

#### Equipment Reliability

- Reduce critical component failures
- Protect operating margins
- Eliminate latent vulnerabilities
- Preserve long term health

#### Human Performance

- Leadership observations/worker awareness
- Improved work processes and worker engagement

#### Workforce Development and Engagement

- Worker training and qualifications, local college partnerships
- Leadership training





















# Nine Mile Point Overview

Ken Langdon
Site Vice President

- Accomplishments
- Ongoing Improvements
- Ongoing Regulatory/Licensing Initiatives
- Station Focus Areas

#### NMP 2011-2012 Accomplishments

#### Since our last meeting in July 2011 we improved nuclear safety and security:

- Reduced likelihood of initiating events
  - Improved operator performance: fundamentals and questioning attitude
  - Replaced high pressure turbine rotor
  - Upgraded main transformer and bus duct cooling
  - Modified main feedwater pumps for greater reliability
- Improved occupational radiation safety
  - Unit 2 chemical decontamination
  - Replaced control rod blades to eliminate cobalt source
- Sustained excellent fuel performance at both units
- Completed NRC Acceptance Review for NMP1 NFPA-805 submittal
- Successfully implemented Unit 2 extended power uprate
  - Embraced learnings experienced during evolution
  - Performing focused self-assessment for additional lessons











#### Ongoing Improvements 2012-2014

We will continue to improve nuclear safety and security:

- Improve human performance
  - Evaluate and reverse recent trends
- Reduce the likelihood of initiating events at Unit 1
  - Implement NFPA-805 modifications
  - Replace obsolete Turbine Generator Electronic Pressure Regulator (EPR)
  - Install monitoring capability for MSIV solenoids to eliminate inadvertent valve closure and scram during surveillance testing
  - Replace 2<sup>nd</sup> point feedwater heater
- Improve Barrier Integrity
  - Identify and isolate source of Unit 1 tritium
  - Eliminate low level trips on Hydrogen Water Chemistry System
- Enhance ability to protect the public in an emergency
  - Implement NRC-approved EALs based on NEI 99-01, Rev. 5











#### Ongoing Regulatory/Licensing Initiatives

- NMP Unit 1 control rod drive stub tube weld repair method (at NRC)
- NMP Unit 1 NFPA 805 adoption for fire protection program (at NRC)
- NMP Unit 2 updated reactor vessel pressuretemperature limits (to be submitted)
- NMP Unit 2 risk-informed, safety-based ISI program per ASME Code Case N-716 (to be submitted)











#### **2012 Station Focus Areas**

#### Owning Our Safety

- Instill individual responsibility for achieving excellence
- Develop an industry leading Emergency Response Organization.

#### Planning Our Work

Drive improved equipment performance through the disciplined use of the Work
 Management, Asset Management, and Equipment Reliability processes

#### Raising Our Standards

 Ensure high standards of performance at all levels in the organization through the use of the performance improvement model, human performance tools, peer-topeer coaching, and active accountability

#### Driving Our Performance

 Engrain the continuous improvement concept at all levels of the organization through the strategic use of training and workforce planning



























### Ginna Overview

Joe Pacher
Site Vice President

- Accomplishments
- Ongoing Improvements
- Ongoing Regulatory/Licensing Initiatives
- Station Focus Areas

#### Ginna 2011-2012 Accomplishments

# Since our last meeting in July 2011 we improved nuclear safety and security:

- Reduced the likelihood of Initiating Events
  - Improved operator performance: fundamentals and questioning attitude
- Improved Barrier Integrity
  - Sustained excellent fuel performance (no failures since 2000)
- Improved Emergency Preparedness
  - Replaced main steam line radiation monitors











#### Ginna 2011-2012 Accomplishments (Cont'd)

# Since our last meeting in July 2011 we improved nuclear safety and security:

- Strengthened Security and Safeguards
  - Improved Security Force morale
  - Improved safeguards information storage and controls
  - Improved Bullet-Resistant Enclosures
- Improved Materiel Condition
  - Auxiliary building coatings and lighting
  - Engineering building expansion
  - Turbine building window replacement











#### Ongoing Improvements 2012-2014

#### We will continue to improve nuclear safety and security:

- Improve Mitigating System Performance
  - Dedicated DG-power train for electric auxiliary feedwater pumps
  - RCS insulation banding (GSI-191)
  - Containment "B" recirculation fan motor replacement
- Improve Barrier Integrity
  - Incore flux mapping system replacement
  - Reactor vessel head inspections
  - Fuel handling manipulator upgrade
  - Modify fuel transfer slot blind flange
  - Charging pump vari-drive replacement (one done/two to go)
  - CVCS hold-up tank level indication upgrade (one done/one to go)
- Enhance ability to protect the public in an emergency
  - Implement NRC-approved EALs based on NEI 99-01, rev. 5











#### Ongoing Regulatory/Licensing Initiatives

- EAL scheme upgrade to NEI 99-01, Rev. 5 (at NRC)
  - Ginna responding to RAI
- NRC triennial fire protection inspection (9/24)
- NRC licensed operator requalification inspection (11/12)
- Request to amend license to increase containment temperature limit (planned for February 2013)
- NRC target set inspection (February 2013)
- NFPA-805 submittal (March 2013)
- NRC/FEMA hostile action-based exercise (September 2013)











#### 2012 Site Focus Areas

- Safety
  - Nuclear, Industrial, Radiological
- Human Performance
  - Improve accountability, worker practices, human performance tool usage
- Operational Excellence
  - Achieve recognition from INPO and industry as excellent plant
- Outage Readiness
  - Execute safe and event free
- Developing Our People
  - Train our people, maintain robust employment "pipelines"











#### NRC Region I Perspectives

Bill Dean - NRC Region I Administrator











#### NRC/NRR Perspectives

 Eric Leeds - Director, Office of Nuclear Reactor Regulation











#### NRC/NSIR Perspectives

 Jim Wiggins - Director, Office of Nuclear Security and Incident Response











#### NRC Executive Director for Operations

 Michael Johnson – Deputy Executive Director for Operations













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### **Closing Remarks**