

Introduction to the U.S. EPR



**Presented to
U.S. Department of Energy
October 20, 2006**

AGENDA

9:00 am - 9:30 am	Opening Remarks	M. Parece S. Sloan
9:30 am - 10:45 am	U.S. EPR Overview	M. B. Baker
10:45 am - 11:00 am	Break	
11:00 am - 12:00 pm	U.S. EPR Mechanical Systems	T. Stack
12:00 pm - 12:30 pm	Core/Fuel Design	M. Parece
12:30 pm - 1:15 pm	Lunch	
1:15 pm - 1:35 pm	Electrical Systems	B. Gardes
1:35 pm - 2:25 pm	I&C	J. Shook
2:25 pm - 2:35 pm	Break	
2:35 pm - 3:00 pm	Reactor Building	T. Stack
3:00 pm - 3:50 pm	Severe Accident	T. Stack
3:50 pm - 4:00 pm	Closing Remarks	M. Parece et.al.

Opening Remarks

Marty Parece
Chief Engineer
Manager, Technical Integration

Sandra Sloan
Regulatory Affairs Manager

New Plants Deployment
AREVA NP, Inc.

AREVA: A Global Industrial Group

- **VISION:** Provide reliable technological solutions for CO2-free power generation and electricity transmission & distribution.
- **MISSION:** Formed in January 2001, AREVA's businesses help meet the 21st century's greatest challenges -- making energy available to all, protecting the planet, and acting responsibly toward future generations.

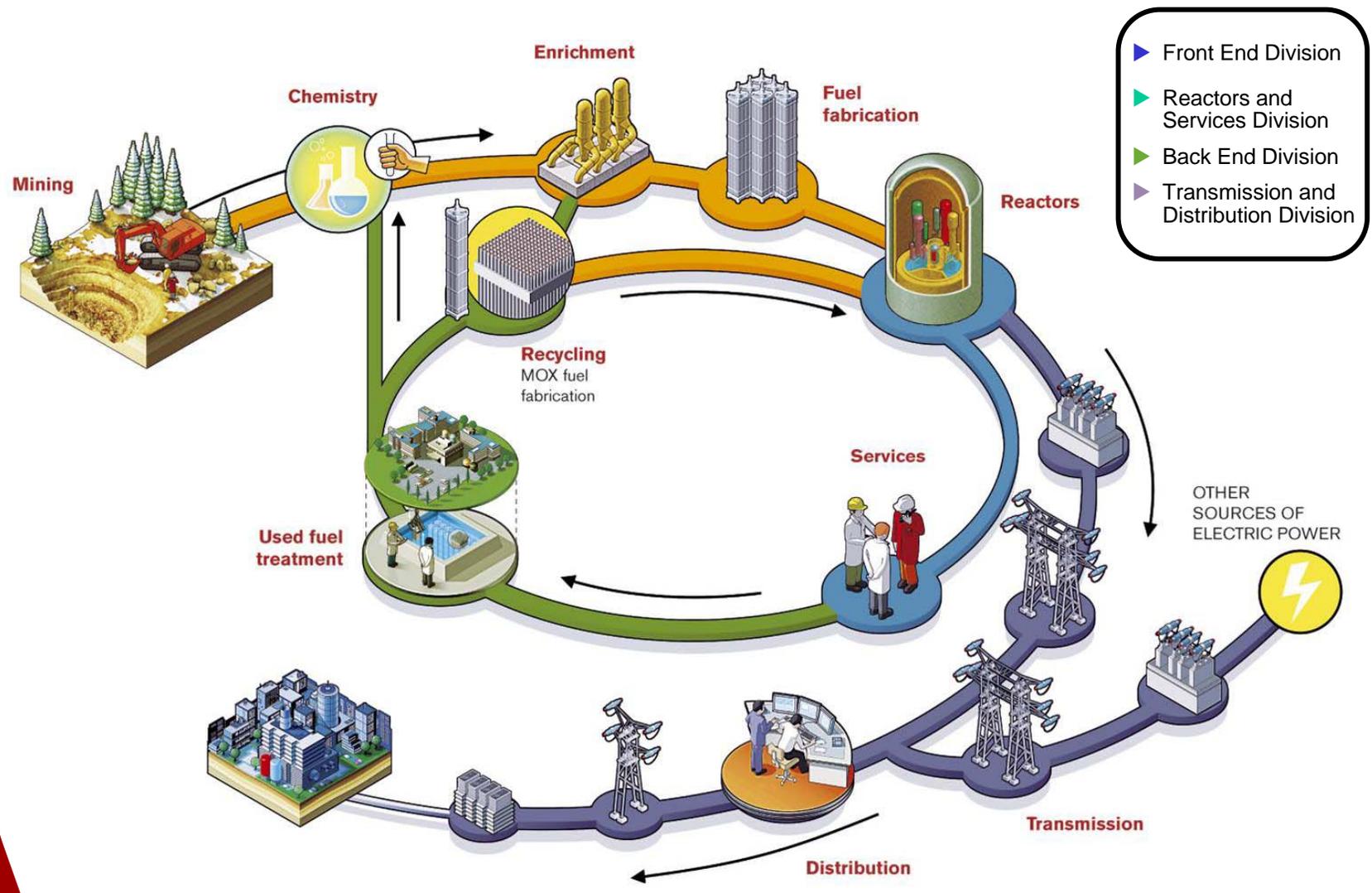
➤ **KEY NUMBERS:**

- ◆ Manufacturing facilities in 40 countries
- ◆ Over 58,000 employees worldwide
- ◆ \$10.2 billion in sales in 2005
- ◆ Named to the FORTUNE 500 in 2005



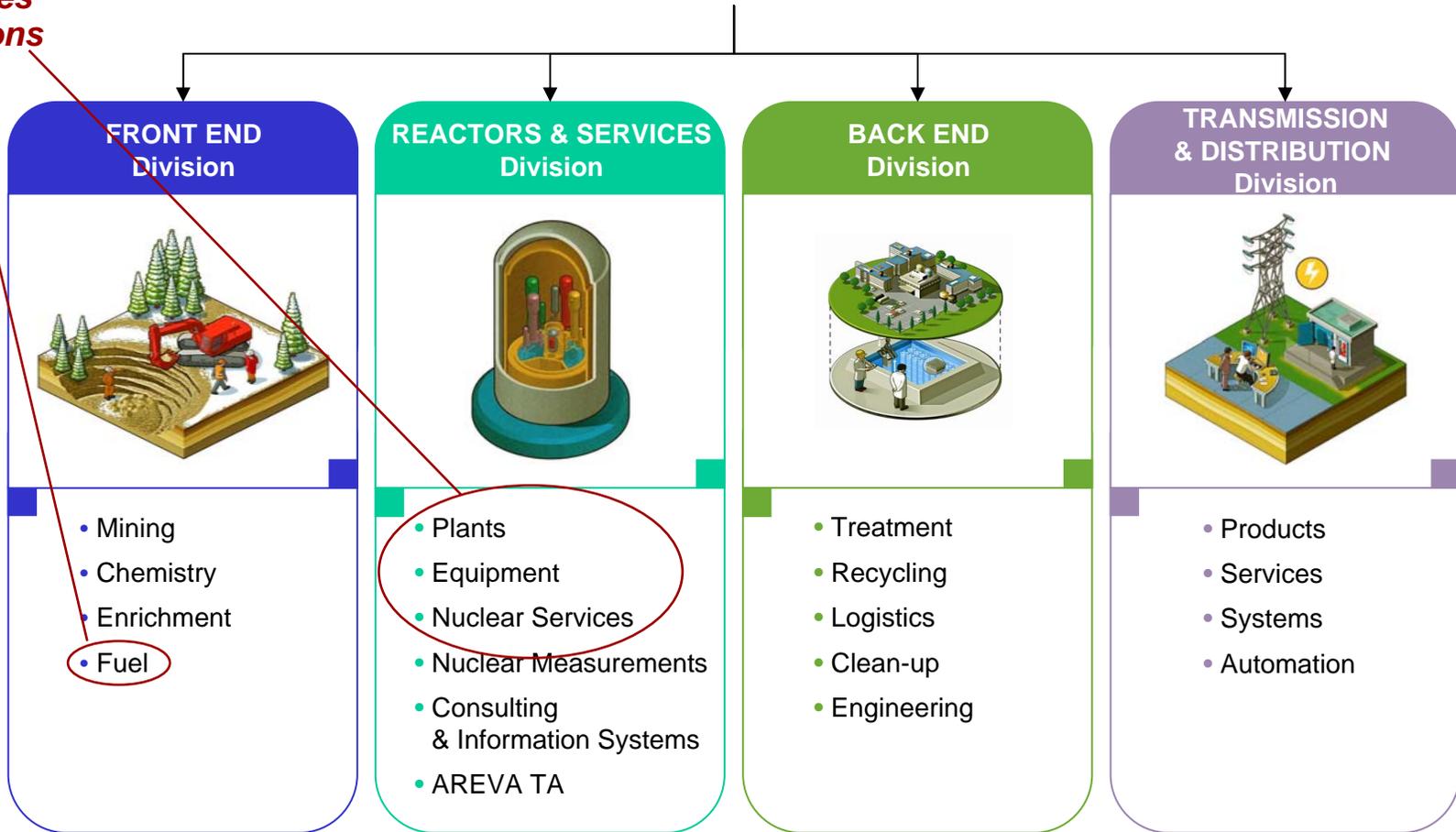
449	•	AREVA[®]	FRANCE	13,816.9	47.9	532.3	345	20.9	33,517.0	257	5,764.5	336	70,069	208	11
446	•	SK NETWORKS [®]	SOUTH KOREA	13,844.3	14.5	382.2	392	(72.8)	8,844.7	464	601.8	487	3,340	494	46
447	•	EASTMAN KODAK	U.S.	13,829.0	3.7	956.0	329	119.8	14,737.0	410	3,811.0	410	54,800	268	38
448	•	CHINA FIRST AUTOMOTIVE WORKS [®]	CHINA	13,825.4	0.4	293.4	417	(58.1)	12,430.9	431	1,976.1	463	138,049	95	32
449	•	AREVA [®]	FRANCE	13,816.9	47.9	532.3	345	20.9	33,517.0	257	5,764.5	336	70,069	208	11
450	•	SHIMIZU [®]	JAPAN	13,811.2	0.6	180.7	439	135.1	15,358.6	356	2,577.8	441	12,190	460	12

Energy: our core business

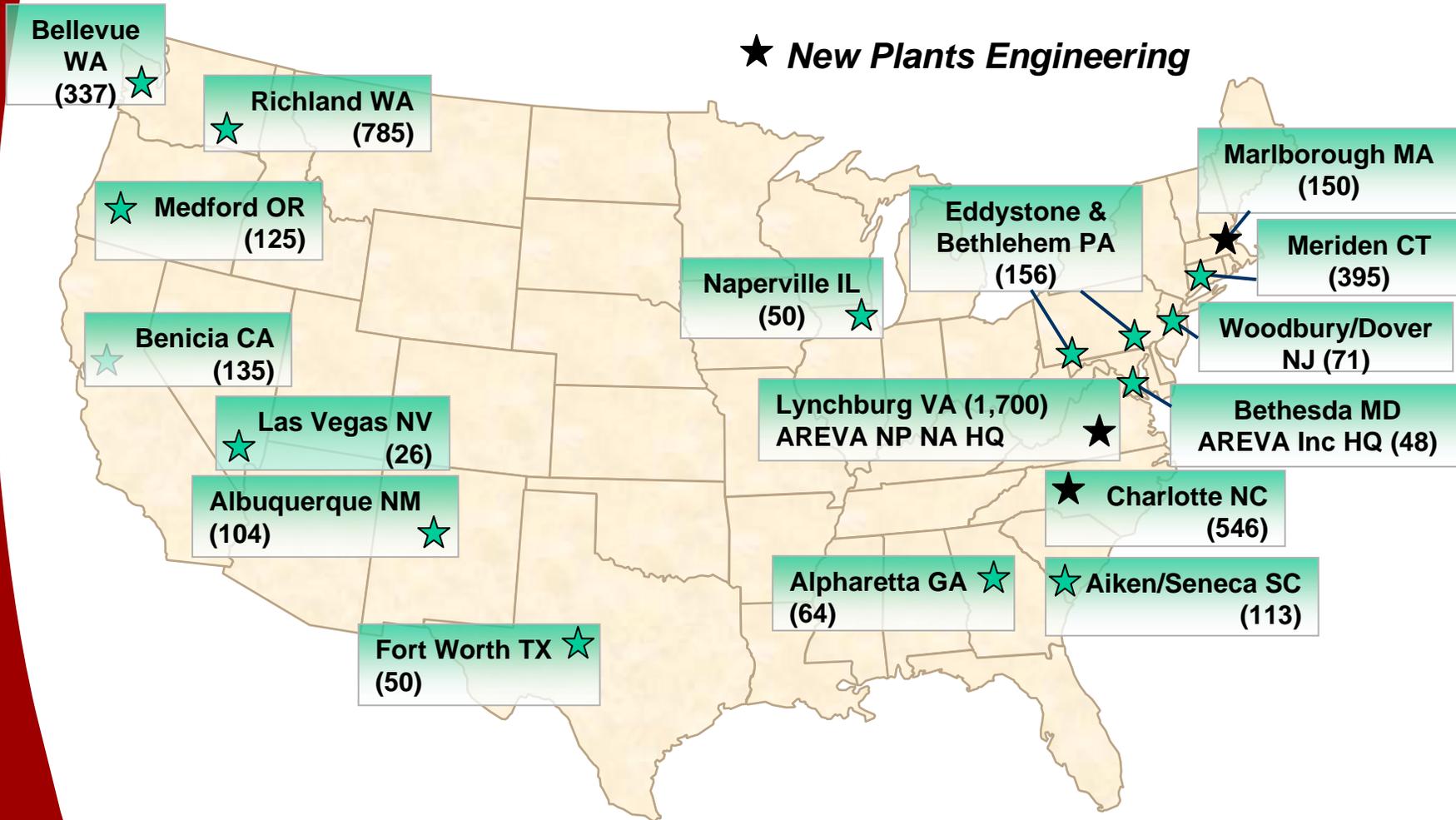


Organization of the group

AREVA NP lies within AREVA's front end and reactors & services divisions

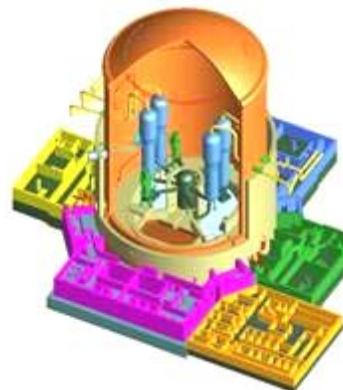


Major AREVA group locations in the U.S.

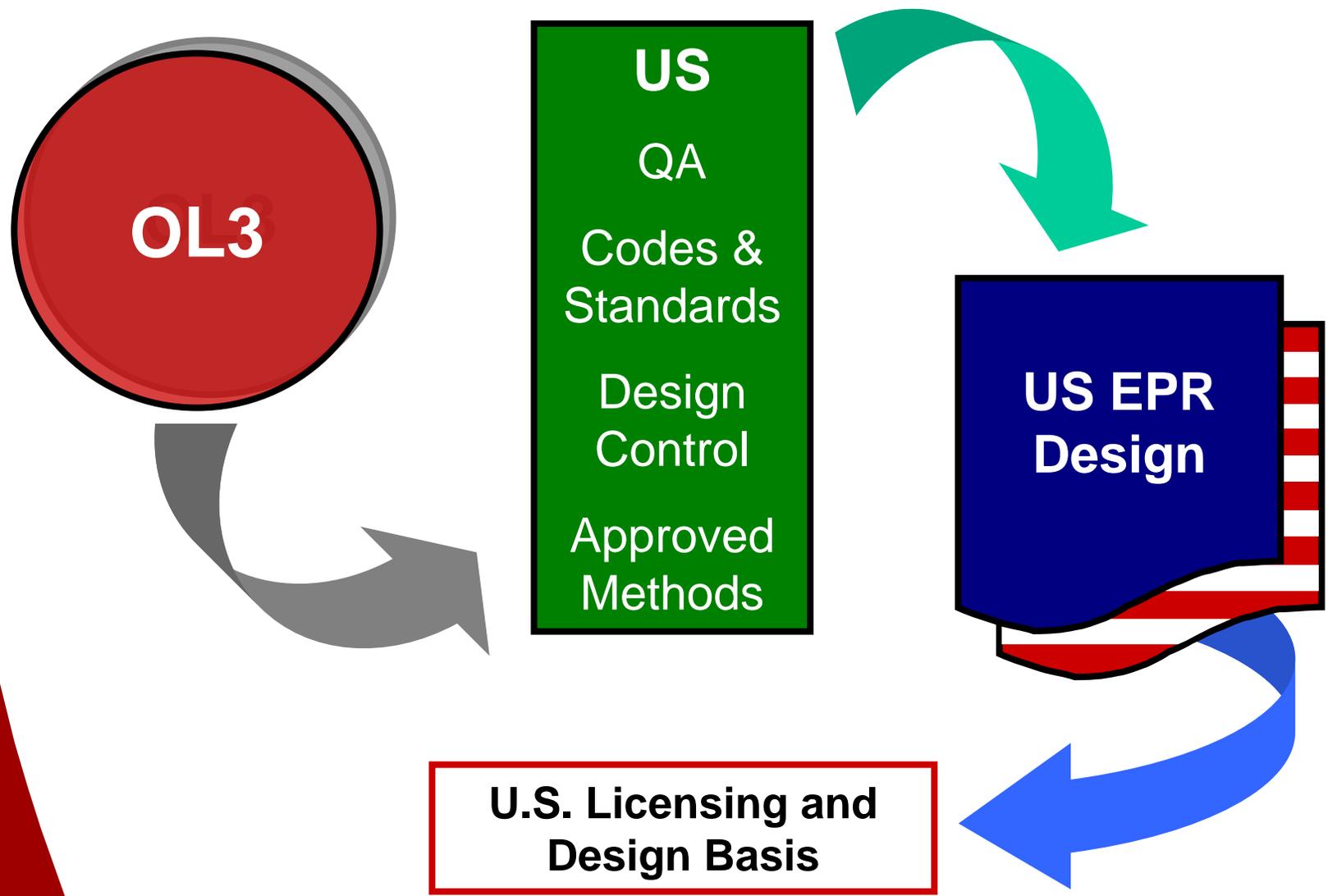


- ▶ 5,000 American energy employees
- ▶ 40 locations
- ▶ \$1.8 billion in energy revenues in 2005

- Design Authority established in U.S. (Lynchburg, Charlotte, etc.)
- Licensing in progress... submit Design Certification Application to NRC at end of 2007
- UniStar Nuclear established as joint venture by Areva and Constellation Energy to build a fleet of standardized U.S. EPRs in North America
- Goal of 80% U.S. content in first unit



EPR Design Conversion



Status of U.S. EPR Licensing Activities

➤ Design Certification (DC)

- ◆ In Phase 2 of NRC pre-application review for design certification
 - Continued series of technical exchange meetings
 - Submittal of topical reports for review
- ◆ Design Certification application to be submitted in December 2007



➤ Combined License (COL)

- ◆ UniStar Nuclear plans to submit at least four COL applications referencing the U.S. EPR
- ◆ First UniStar Nuclear COL application to be submitted no later than June 2008

***Licensing preparations on schedule
to support U.S. EPR deployment in 2015.***

Global EPR Licensing Status

- **Finland (Olkiluoto 3)**
 - ◆ Construction permit issued in February 2005
 - ◆ Commercial operation in 2009

- **France (Flamanville 3)**
 - ◆ DGSNR reviewed and issued design approval (September 2004)
 - ◆ Construction start in 2007
 - ◆ Commercial operation in 2012



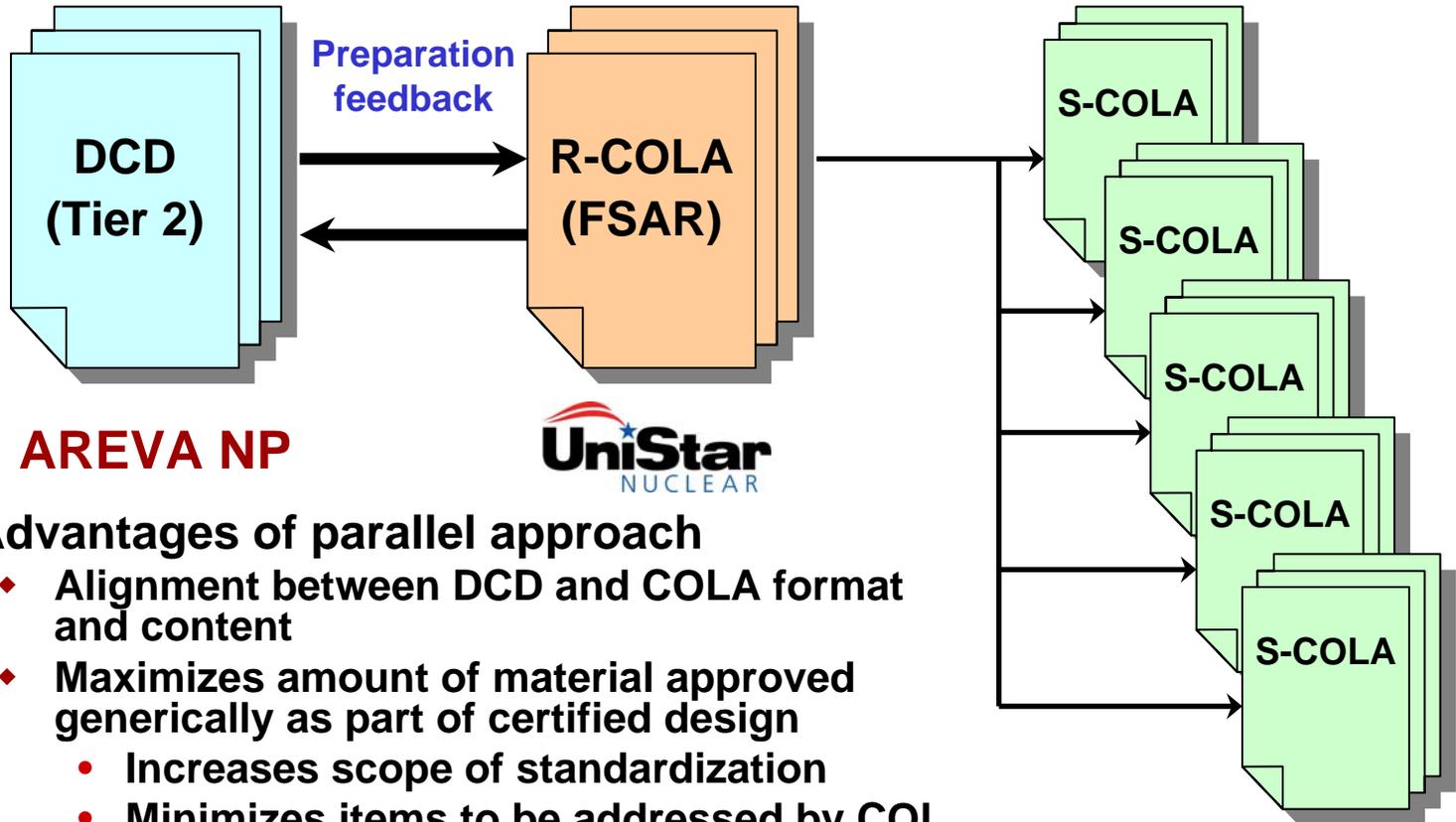
Key Elements of U.S. EPR Licensing Strategy

- **Parallel preparation and NRC review of DC and COL applications**
- **Pre-application submittal of material supporting the DC review**
- **High threshold for “open items” in DC left to be addressed by COL applicant**
 - ◆ **Design Acceptance Criteria (DAC)**
 - ◆ **COL action items**
- **Multinational Design Evaluation Program (MDEP)**
 - ◆ **Stage 1: Opportunity to leverage international regulatory experience and resources to enhance the efficiency and effectiveness of the NRC DC review of the U.S. EPR**

U.S. EPR Licensing Approach

DCD and COLA prepared and reviewed concurrently

S-COLA ~80% same as R-COLA



AREVA NP



- **Advantages of parallel approach**
 - ◆ Alignment between DCD and COLA format and content
 - ◆ Maximizes amount of material approved generically as part of certified design
 - Increases scope of standardization
 - Minimizes items to be addressed by COL applicant
 - No need for recertification or DC amendment
 - ◆ Efficient use of NRC review resources

Parallel NRC Review of DC and COL Applications

- **Key process elements for parallel DC / COL review**
 - ◆ **NRC reviews generic U.S. EPR information exclusively in the DC application review process**
 - ◆ **U.S. EPR DC rule issued prior to COL ASLB hearing, providing finality on generic U.S. EPR issues with respect to COL proceedings**
 - ◆ **NRC COLA review focuses on environmental, programmatic and site-specific topics, relying on its DC application review to address generic U.S. EPR design issues**

DC/COL Parallel Review Process

