

Governor's Nuclear Advisory Council SCE&G Nuclear Update

April 2015

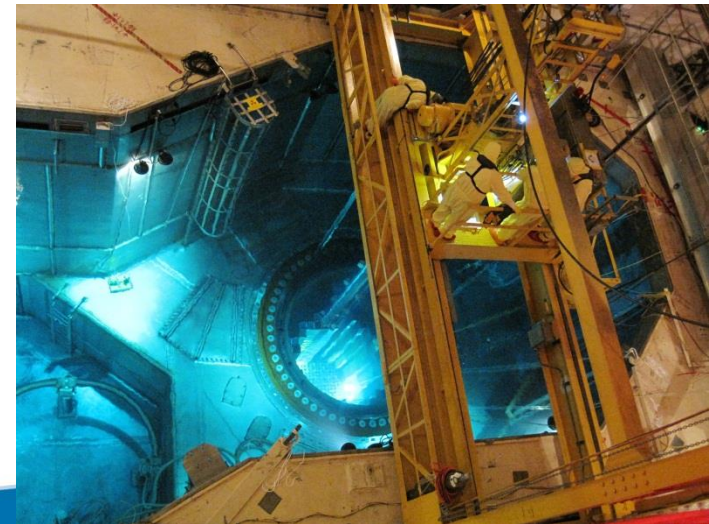




- Westinghouse 3 loop, 2900 MW Thermal (4.5% up-rate 1996)
- Turbine GE 990-1015 MW Electric
- Commercial 1984 (License Extension to 2042)
- Steam Generators Replaced 1994
- GE turbine controls and main generator breaker upgraded 2011
- Main Transformer Replaced 2009

2014 Review

- Ice Storm - ~ 70 staff sequestered for 3 days
- World Association of Nuclear Operators (WANO) Evaluation
- Refueling 21
- Mid-cycle outage



2014 Review

- Dry Cask Storage Pad complete
- NRC approved fire safety upgrade (NFPA 805)
- New Technical Support Center Facility complete
- New Reactor vessel head ordered, replace in 2017
- WANO Corporate evaluation
- Fukushima Response (FLEX)



FLEX – Three Phases

Goal – Provide core and spent fuel cooling, and protect containment integrity, under extreme events. Assume Extended Loss of All AC Power (ELAP).

- **Phase 1:** Initially cope by relying on installed/protected plant equipment and minimum staffing (> 6 hours)
 - Two modifications to improve short term response
- **Phase 2:** Transition from installed plant equipment to onsite FLEX equipment with minimal additional staffing
 - Three modifications to allow equipment connection
- **Phase 3:** Obtain additional capability and redundancy using Regional Response Center (RRC) equipment (> 24 hours)
 - Two modifications to allow use of RRC equipment



Fukushima (FLEX) Equipment



- 2 Pumper Trucks
- 2 300KW Diesel Generators
- 3 80KW DGs
- 7 6.5KW DGs
- 2 1KW DGs
- 2 1000KW Turbine Generators
- 3 80 KW Stationary Building DGs
- 12 Portable ventilation fans
- 4 Ultimate heat sink pumps
- 2 Tracked Prinoth Panthers
- 2 Booster Pumps
- 1 Portable Sump Pump
- 1 Portable Air Compressor
- 1 SG feed pump
- 1 RCS Makeup Pump
- 1 Portable battery charger
- 1 Portable comm tower
- 1 Front end loader



To support FLEX, US nuclear utilities have teamed up to establish two US nuclear regional response centers (RRCs) and purchase 5 sets of FLEX equipment for each.



Each RRC has the following equipment:

- 4 sets of FLEX equipment ready for shipping
- 1 set of FLEX equipment undergoing routine maintenance
- Non-generic (i.e., site-specific) equipment requested by individual stations

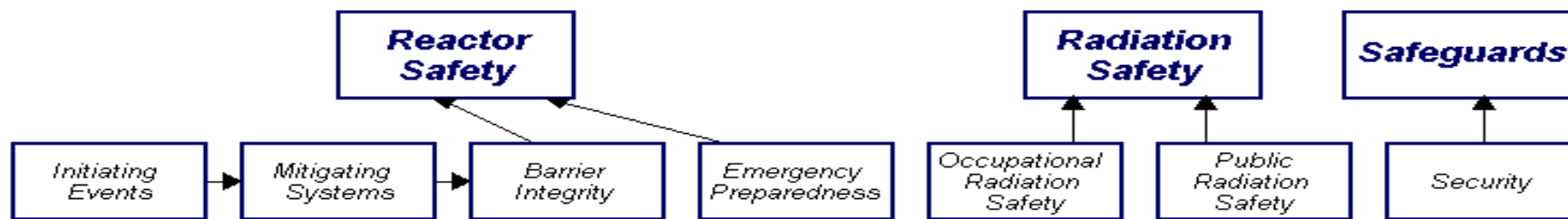
2014 NRC & INPO Inspections

NRC Inspections
Buried Pipe Inspection (Feb/March)
Security Force on Force Inspection (March)
Security Response to Aircraft Threat Inspection (March)
Inspection (RF 21)
Steam Generator Inservice Inspection (RF 21)
Dynamic Restraint Program (Snubbers) (RF 21)
RP Occupational Baseline (RF 21)
Material Control & Accountability (RF 21)
PI&R (August)
ISFSI Pad Inspection
EP Program Inspection (September)
CDBI
Security Baseline (November)

INPO Visits
Emergency Preparedness Review
WANO Domestic Peer Review (2/28/14)
Emergency Diesel Generator Review
Corporate Evaluation (12/14)

All NRC inspections were “routine” with no significant findings. We remain in the most favorable regulatory category for plant performance.

**Summer
4Q/2014 Performance Summary**



Performance Indicators

Unplanned Scrams (G)	Safety System Functional Failures (G)	Reactor Coolant System Activity (G)	Drill/Exercise Performance (G)	Occupational Exposure Control Effectiveness (G)	RETS/ODCM Radiological Effluent (G)	Protected Area Equipment (G)
Unplanned Power Changes (G)	Emergency AC Power System (G)	Reactor Coolant System Leakage (G)	ERO Drill Participation (G)			
Unplanned Scrams with Complications (G)	High Pressure Injection System (G)		Alert and Notification System (G)			
	Heat Removal System (G)					
	Residual Heat Removal System (G)					
	Cooling Water Systems (G)					

2015 Preview

- Pre-outage INPO and NRC FLEX audits (April/July)
- Refuel 22 starts 10/2/15

Strategic Focus Areas

- Workforce Proficiency
- Equipment Reliability
- Obsolescence
- Life Extension to 2062



Independent Spent Fuel Storage Installation (ISFSI)



Each container can hold 37 fuel assemblies

Vertical Cask Transporter (VCT) or “Crawler”



**Fully loaded container
345,000 lbs**

**Fully loaded 767-300
350,000 lbs**



New Nuclear Deployment



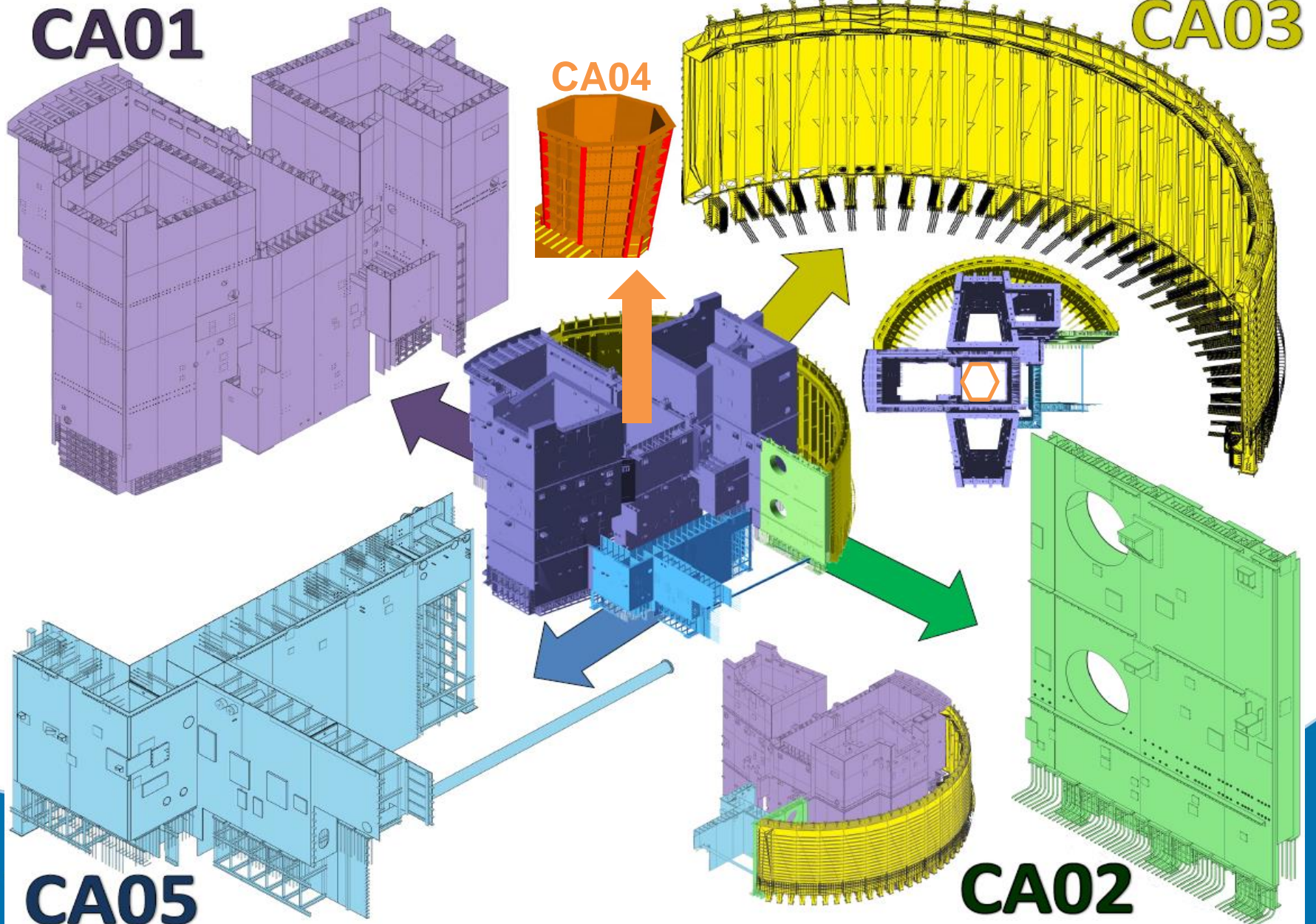
Total New Nuclear Staffing

SCE&G	577
Management	4
NND	91
Operational Readiness	359
Training	53
Unit 1	31
SCANA IT	25
SCANA Insurance	1
SCANA – Financial	13
Consortium	3,712
CB&I	3,046
Westinghouse	163
Subcontractors	503

Recent Schedule Announcement

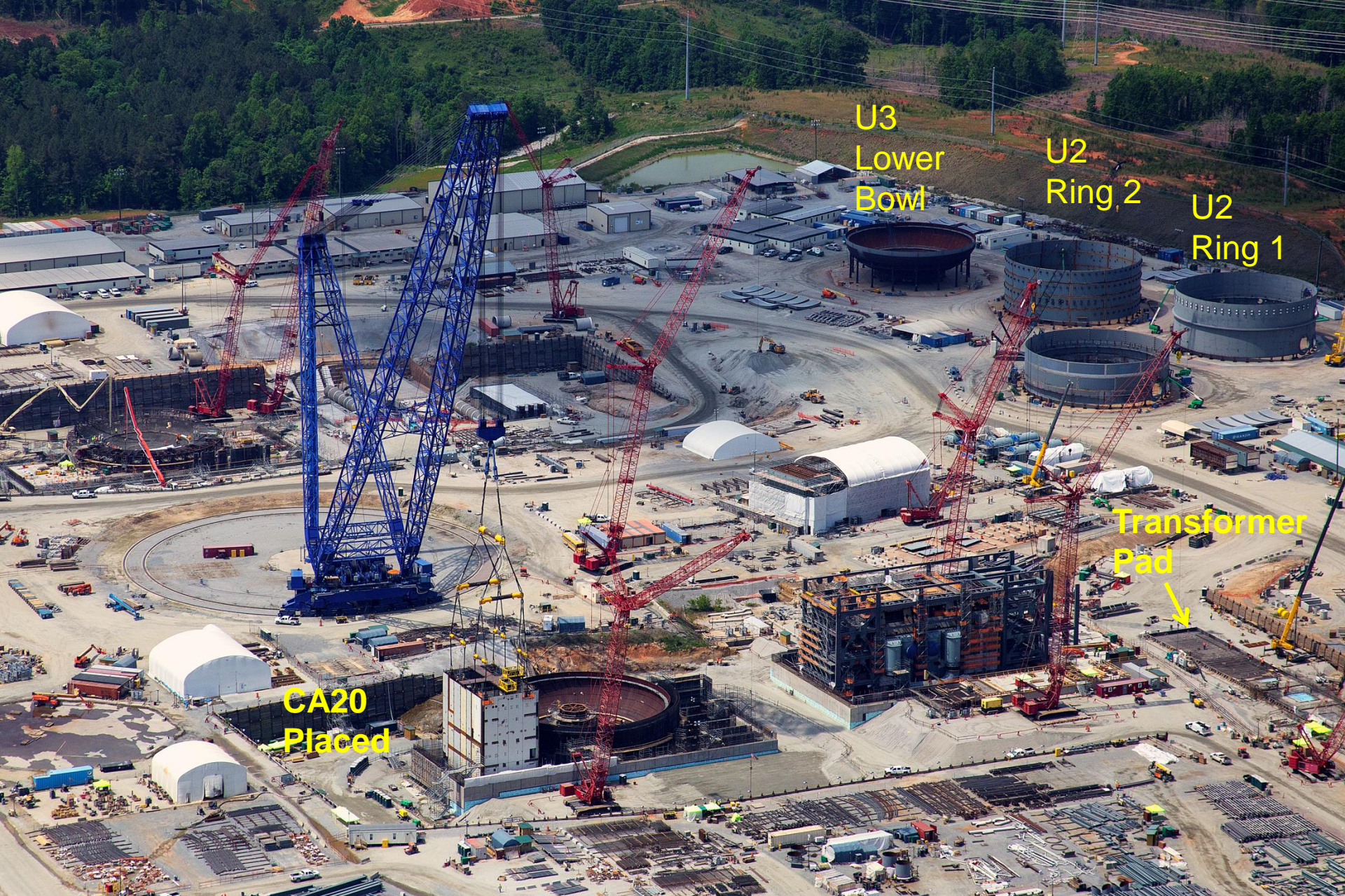
- Filed with PSC for:
 - New construction schedule
 - New capital cost structure
- Delays due to late submodule delivery, CB&I
 - CA01–05 & CA20
- New in service dates June 2019/June 2020
- Cost in future dollars now \$6.827 billion
 - \$514mm over original 2008 filing

CA Modules

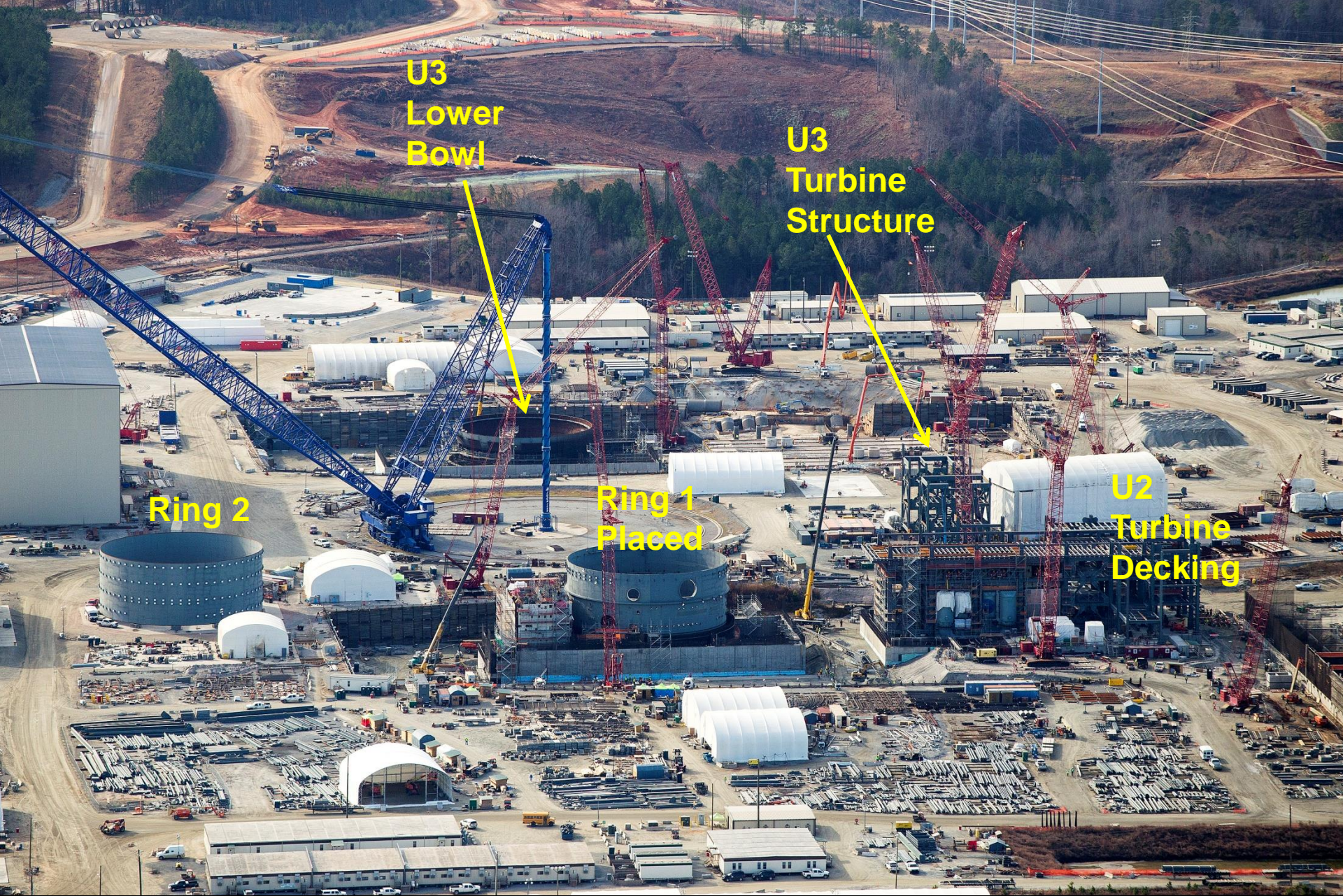


Change of Venue for Modules





Units 2 & 3 – May 2014 Site Overview



U3
Lower
Bowl

U3
Turbine
Structure

Ring 2

Ring 1
Placed

U2
Turbine
Decking

Units 2 & 3 – December 2014 Site Overview

Placement of the Containment Vessel Bottom Head



Placement of Module CA-20



Placement of Containment Vessel Ring 1



Unit 2 Nuclear Island

Inside U2 CV CA05





CONCRETE
PLATE

#END



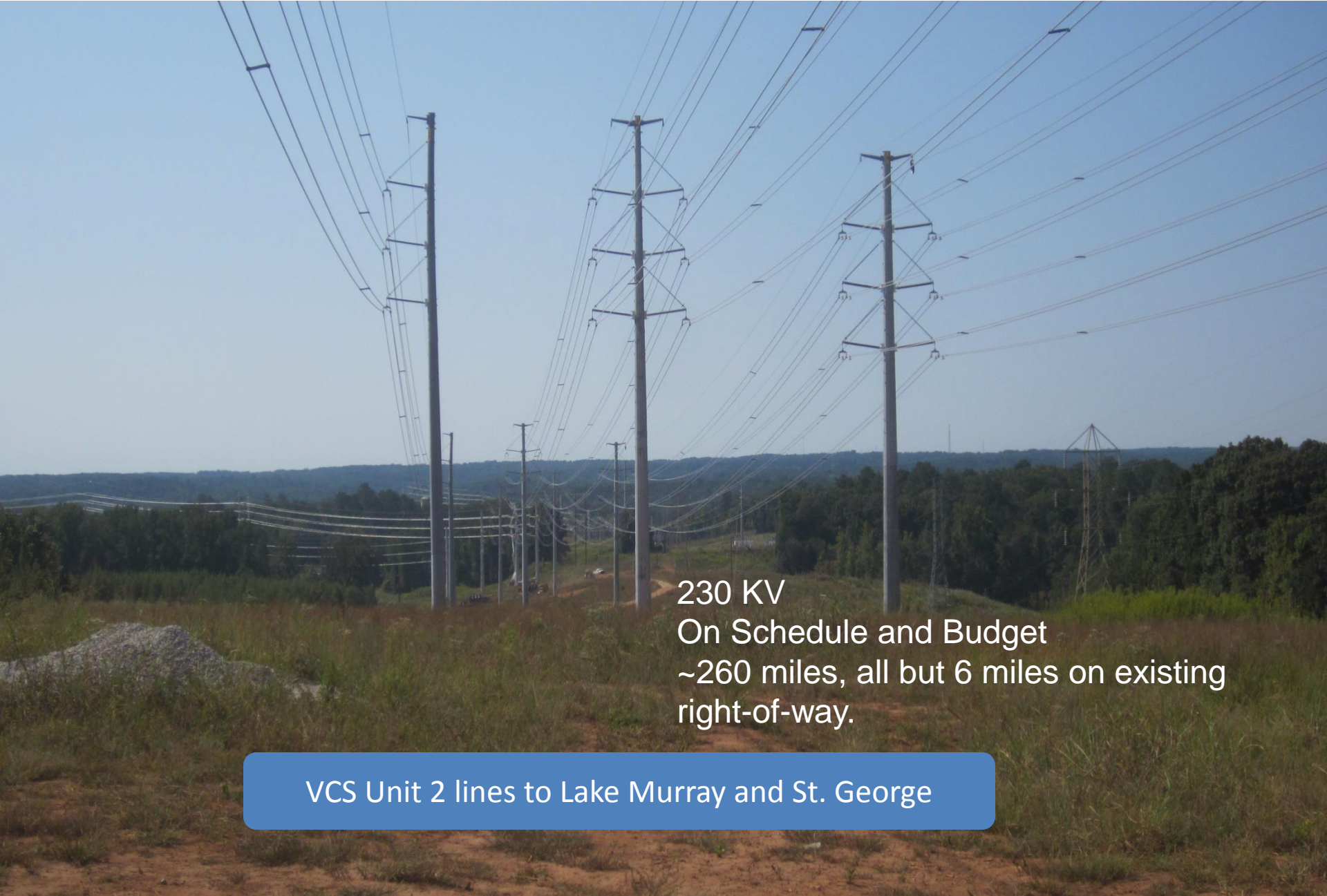


Equipment
Storage
Tents



Units 2 & 3 – December 2014 Site Overview

New Nuclear Transmission



230 KV
On Schedule and Budget
~260 miles, all but 6 miles on existing
right-of-way.

VCS Unit 2 lines to Lake Murray and St. George

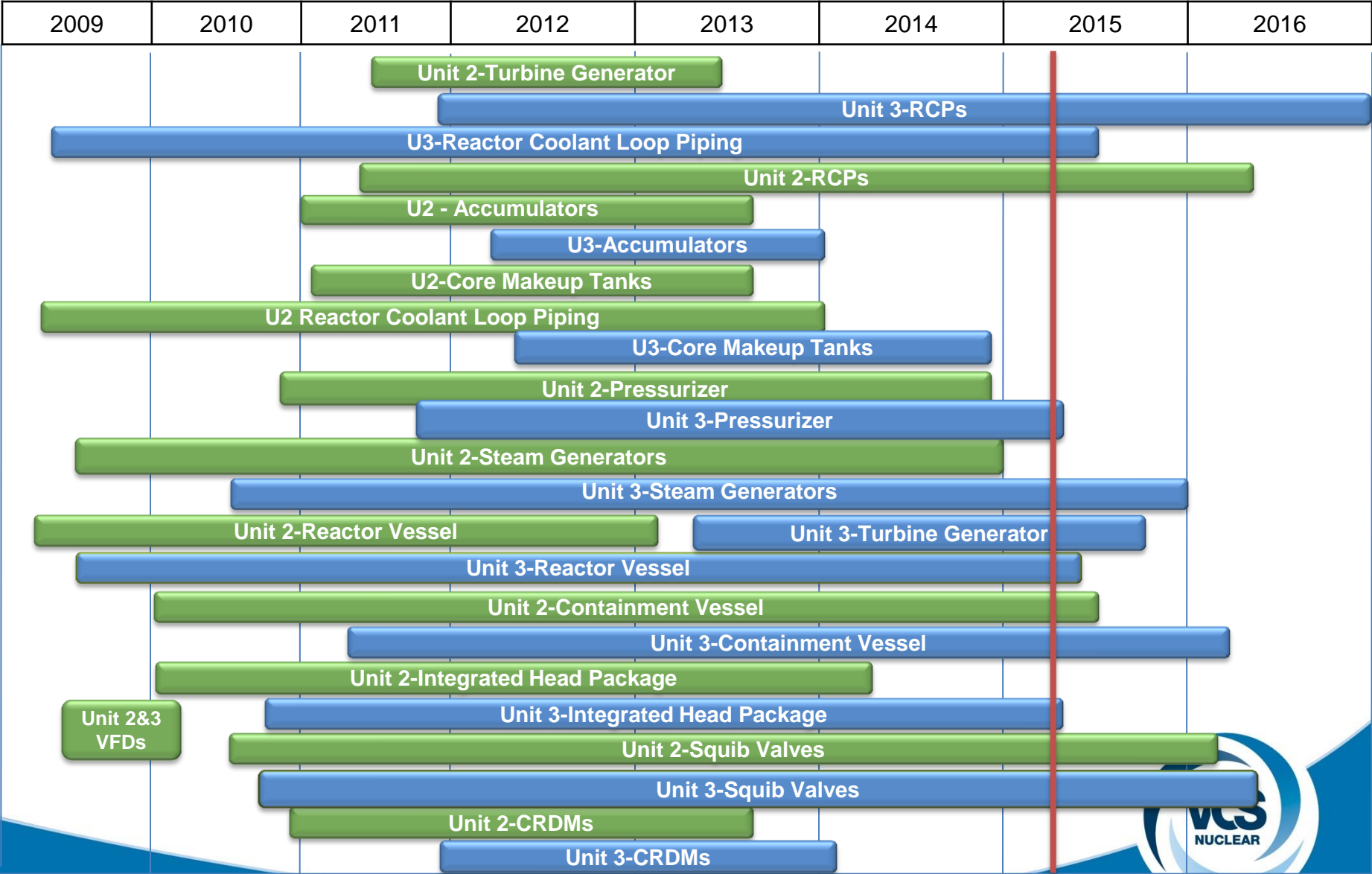
Unit 2 Main Transformers



Oil Filled Transformers



Manufacturing Schedule



Major Equipment Arrivals

One of two U2 Steam Generators

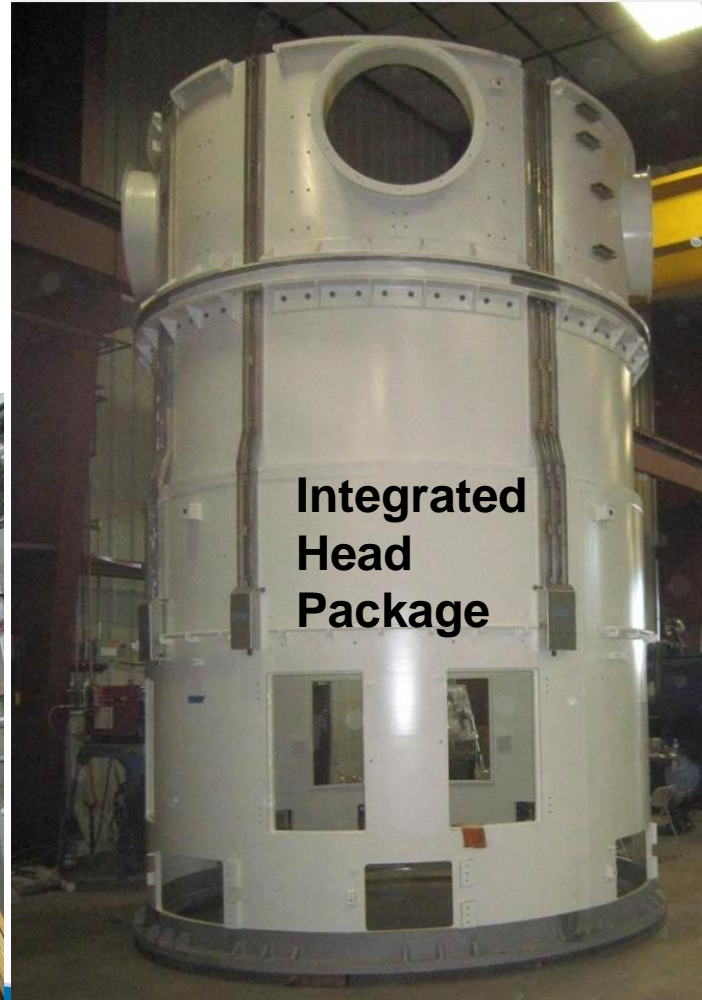


U2
Pressurizer



Other Equipment Arriving

**Aux Boiler Feed
Pumps**



**Condensate
Polisher**



Operational Readiness Training

- 2 operational AP1000 training simulators in service
- Operations Training programs have been accredited by the National Academy for Nuclear Training (NANT)
- 28 AP1000 certified instructors on staff
- Conducted 3 Generic Fundamentals classes with 100% pass rate, this is the first phase of Operator Training
- NRC Initial Licensed Operator Exam Dates
 - May 2015
 - November 2015

Questions?

