



Major Project Plans

Oconee Nuclear Station

Seneca, SC

January 18, 2012

Oconee Nuclear Station

For Information Only

- ❖ **Welcome & Opening Remarks – Preston Gillespie**
- ❖ **Organizational Changes – Preston Gillespie**
- ❖ **Projects Update – Scott Lynch**
- ❖ **Licensing Update – Dave Baxter**
- ❖ **Closing Remarks – NRC / Duke – Preston Gillespie**



Duke Attendees

- ❖ Dhiaa Jamil, Chief Nuclear Officer
- ❖ Bill Pitesa, Sr. VP, Nuclear Operations
- ❖ Preston Gillespie, Site VP, Oconee Nuclear Station
- ❖ Dave Baxter, VP, Nuclear Engineering
- ❖ Dan McRaine, VP, Major Projects
- ❖ Scott Batson, Station Manager
- ❖ Tom Ray, Engineering Manager
- ❖ Bob Guy, Organizational Effectiveness Manager
- ❖ Scott Lynch, General Manager, Oconee Major Projects
- ❖ Chris Nolan, Fleet Safety Assurance Manager
- ❖ Terry Patterson, Oconee Safety Assurance Manager
- ❖ Rich Freudenberger, Regulatory Affairs Manager
- ❖ Dean Hubbard, Regulatory Affairs Manager
- ❖ Barbara Thomas, Project Director, MSIVs, Oconee Major Projects
- ❖ Kent Alter, Regulatory Compliance Manager
- ❖ Sandra Magee, Public Affairs Manager

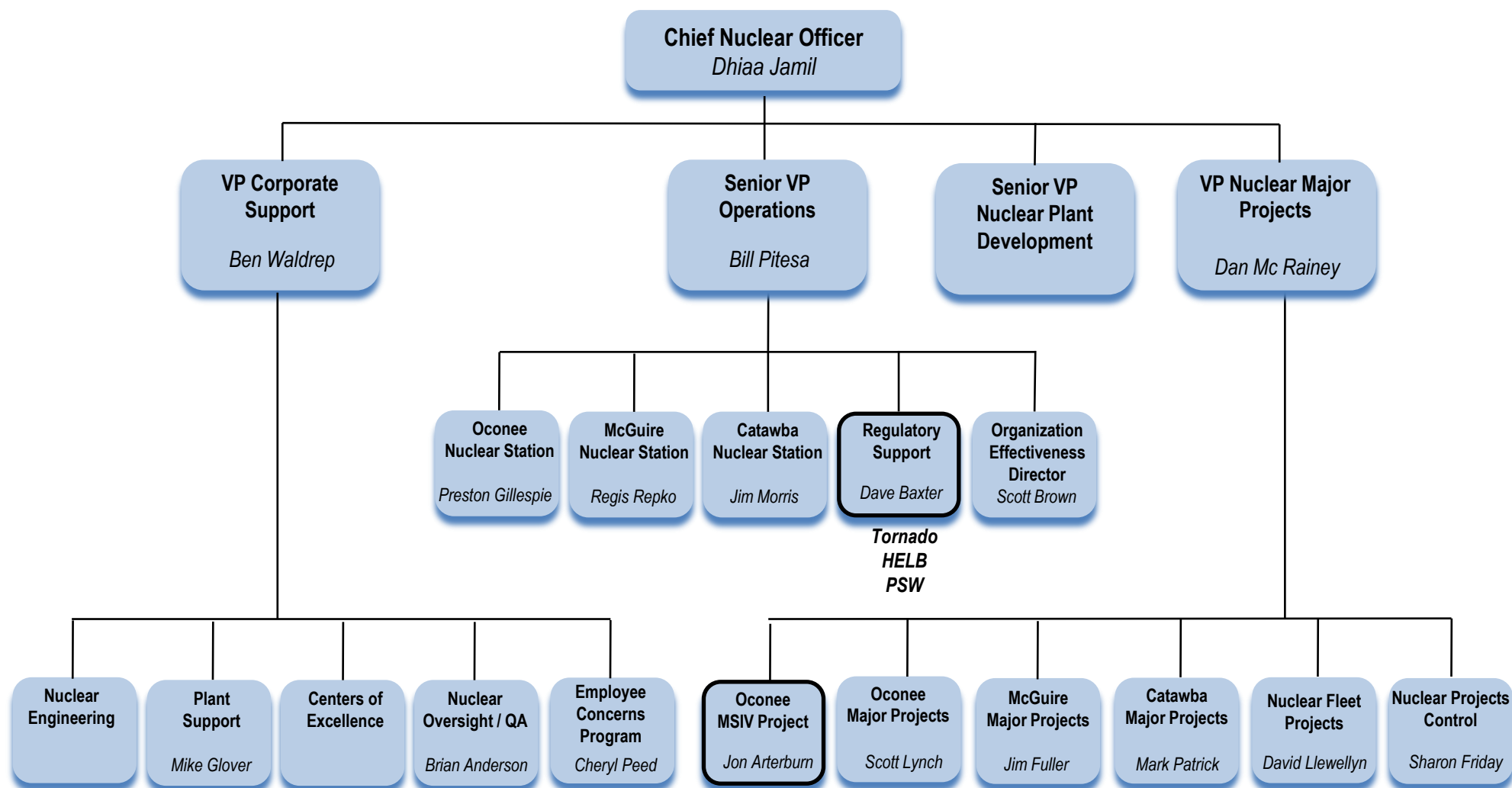


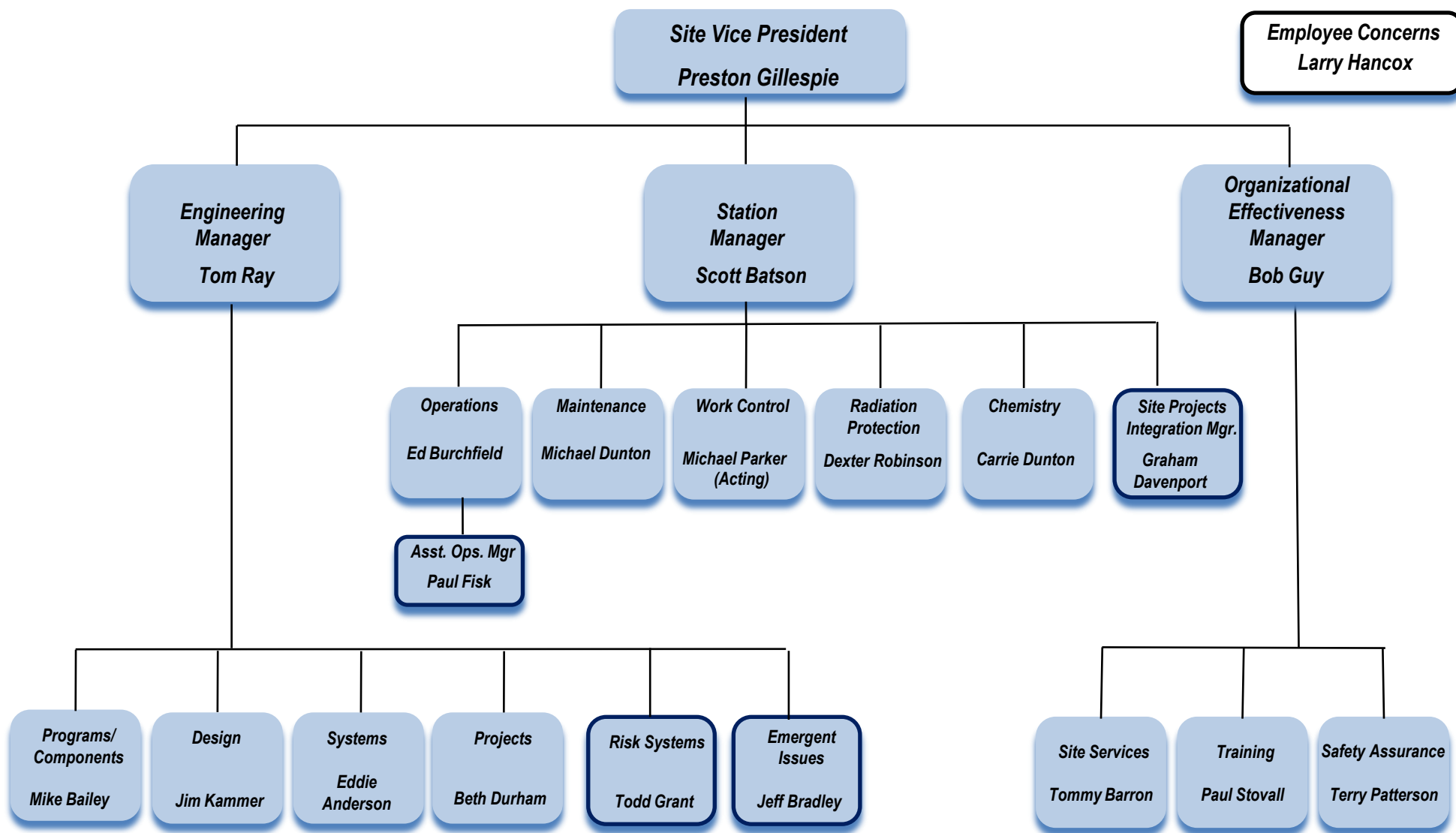
Opening Remarks

Preston Gillespie

Vice President, Oconee Nuclear Station

Executive Leadership







Projects Update

Scott Lynch,

General Manager, Oconee Major Projects



Digital Reactor Protective System (RPS) and Engineered Safeguards (ES)

❖ Regulatory Status

- ❖ License Amendment Request (LAR) submitted - January 2008
- ❖ Safety Evaluation Report (SER) issued - January 2010
- ❖ On-site NRC inspection – June 2011

❖ Project Status

- ❖ Unit 1 installation Spring 2011 - Complete
- ❖ Unit 2 installation Fall 2013
- ❖ Unit 3 installation Spring 2012

❖ Addresses long term obsolescence



**Platts Global Energy Award
2011 Engineering
Project of the Year**



NFPA* 805 Transition

❖ Regulatory Status

- ❖ Safety Evaluation Report (SER) Issued December 29, 2010
- ❖ Self approval will require another LAR submittal

❖ Project Status

- ❖ Protected Service Water System required to complete implementation
- ❖ Fire Probabilistic Risk Assessment (PRA) Peer Review successfully completed in November, 2011
 - ❖ Activities in progress(i.e. Fire Risk Evaluations, Nuclear Safety Capability Assessment, etc.)
- ❖ Modifications on schedule to be completed per SER
 - ❖ Turbine/Auxiliary Building Wall Fire Barrier Upgrade
 - ❖ Purge Inlet Room/Auxiliary Building Fire Barrier Upgrade
 - ❖ Blockhouse Pressure Relief Shafts Upgrade
 - ❖ General Area/Hazard Fire Detection Improvements
- ❖ Program Implementation Team; in place
 - ❖ Two year implementation window – ONS on track to complete on schedule
 - ❖ Large list of implementation items from SER to be integrated with program implementation

- ❖ Natural Phenomenon Barrier System (NPBS)
 - ❖ NRC Commitment complete (August 31, 2011)
 - ❖ More than 618 tons of structural steel procured and installed
 - ❖ Approximately 13,100 linear feet of weld (2.5 miles long) was applied, equating to 5.5 tons of weld/filler material
 - ❖ More than 450 cubic yards of QA-1 concrete was placed for the foundation and other structural components, which included 70 tons of rebar
 - ❖ For the first time in the nuclear industry, approximately 11,300 square feet of Fibrwrap[®] used
 - ❖ More than 2,800 lifts were made safely around operating systems, structures and components
 - ❖ Approximately 635,100 work hours were expended with peak workforce of more than 600 technical and craft personnel
 - ❖ Planning activities included 524 work packages, averaging approximately 120 pages of documents per package

Duke Energy Natural Phenomena Barrier System



Unit 1 BWST



Unit 2 BWST



Unit 2 BWST Area



Unit 3 BWST Area

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Duke Energy Natural Phenomena Barrier System



Unit 1 – Looking East



Unit 2 – Looking North

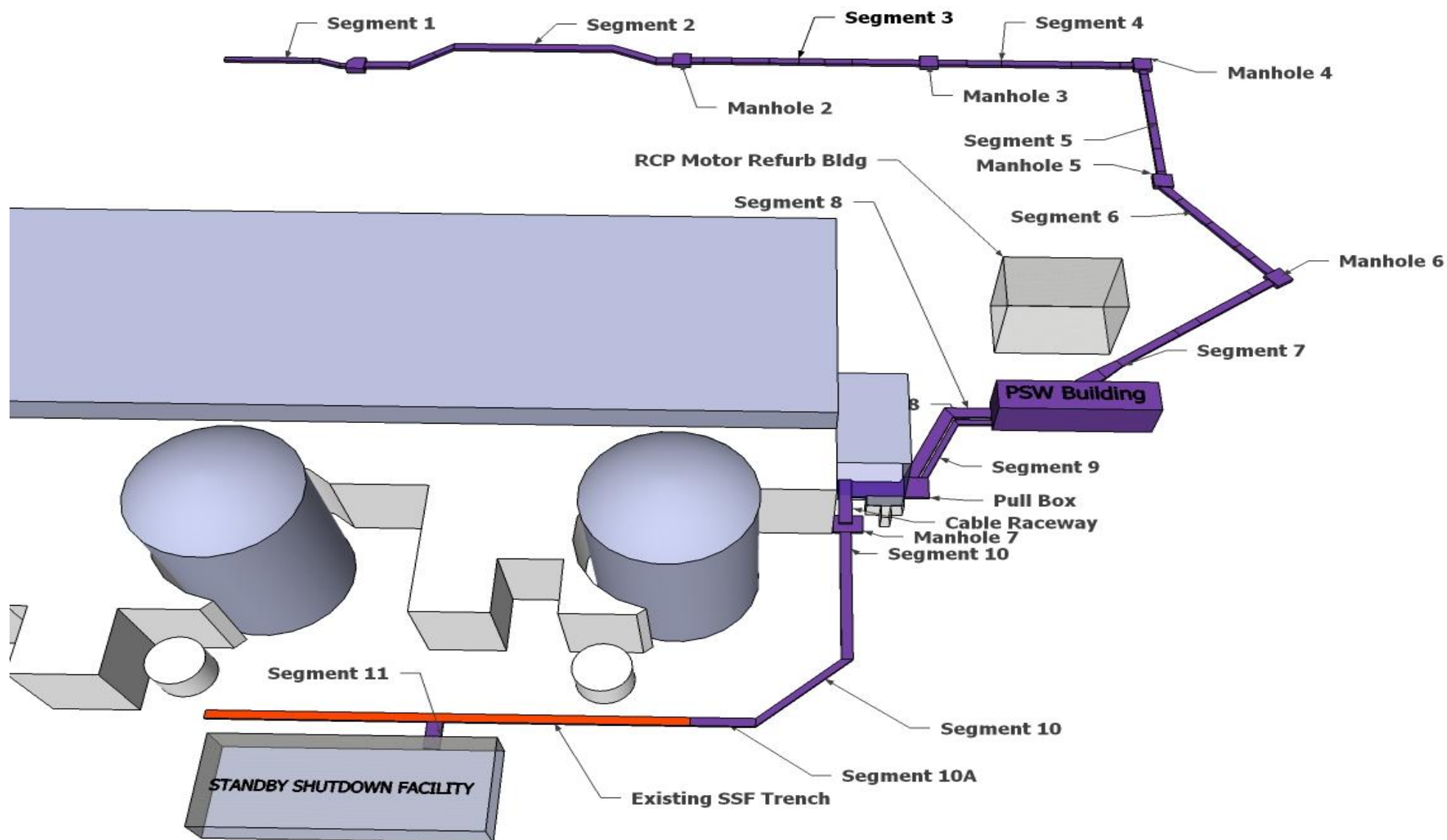


Unit 3 – Looking Southeast

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Protected Service Water

Project Status Overview



❖ In Progress

- ❖ Remaining Engineered Equipment manufacturing and delivery
- ❖ Final design completion
- ❖ Protected Service Water (PSW) Building equipment interconnection and testing
- ❖ SSF Alternate Power Supply
- ❖ Auxiliary Building piping and valves
- ❖ Duct bank cable pulling and terminations
- ❖ Pressurizer Heater and Vital I&C Battery Charger repowering
- ❖ Vital Instrument and Control (I&C) cable reroute
- ❖ Keowee Emergency Start cable reroute

❖ Completed Scope

- ❖ Units 1 and 2 High Pressure Injection (HPI) repowering outage scope
 - Main Control Board modifications
 - Transfer switch installation and testing
 - HPI Valve installation and testing
- ❖ Units 1 and 2 HPI repowering cables between PSW and Auxiliary Buildings
- ❖ Units 1 and 2 HPI components powered up and tested on temporary power
- ❖ Duct Bank infrastructure completed to support cable pulling
- ❖ Overhead Fant Line for offsite power
- ❖ Cable raceway required for cabling between Auxiliary Building and PSW Building
- ❖ PSW Building structure
- ❖ PSW Building power delivery equipment in place
- ❖ Auxiliary Building cable tray for PSW
- ❖ First Standby Shutdown Facility (SSF) Outage to support SSF repowering
- ❖ Condensate Test Line

❖ Remaining Scope

- ❖ PSW Equipment wiring and testing
- ❖ Units 1 and 2 Keowee Outages including Post Mod Testing
- ❖ ASW pump room demolition and installation of new PSW pumps
- ❖ Power Up PSW Building equipment and test
- ❖ U3EOC26 Outage Scope and Integrated Testing
- ❖ SSF Online and Outage work
- ❖ Online Projects (Pressurizer Heater power, Vital I&C Battery Charger power and cable reroute, fire detection)

❖ Challenges

- ❖ **Procurement Document Processing** – Added dedicated engineering resources, developed dedicated procurement team with Senior Duke Manager as Procurement Director, increased Duke oversight presence in vendor facilities
- ❖ **Engineered Equipment Delivery** – OMP Management and expeditors in key vendor shops on a regular basis, vendor increased staffing to improve testing and documentation progress and expedite manufacturing and shipment, added additional engineers to resolve documentation issues associated with conditional releases
- ❖ **Completing Engineering Change Packages** – Awaiting vendor documentation to complete design. Actions previously mentioned are intended to expedite receipt of required documentation.

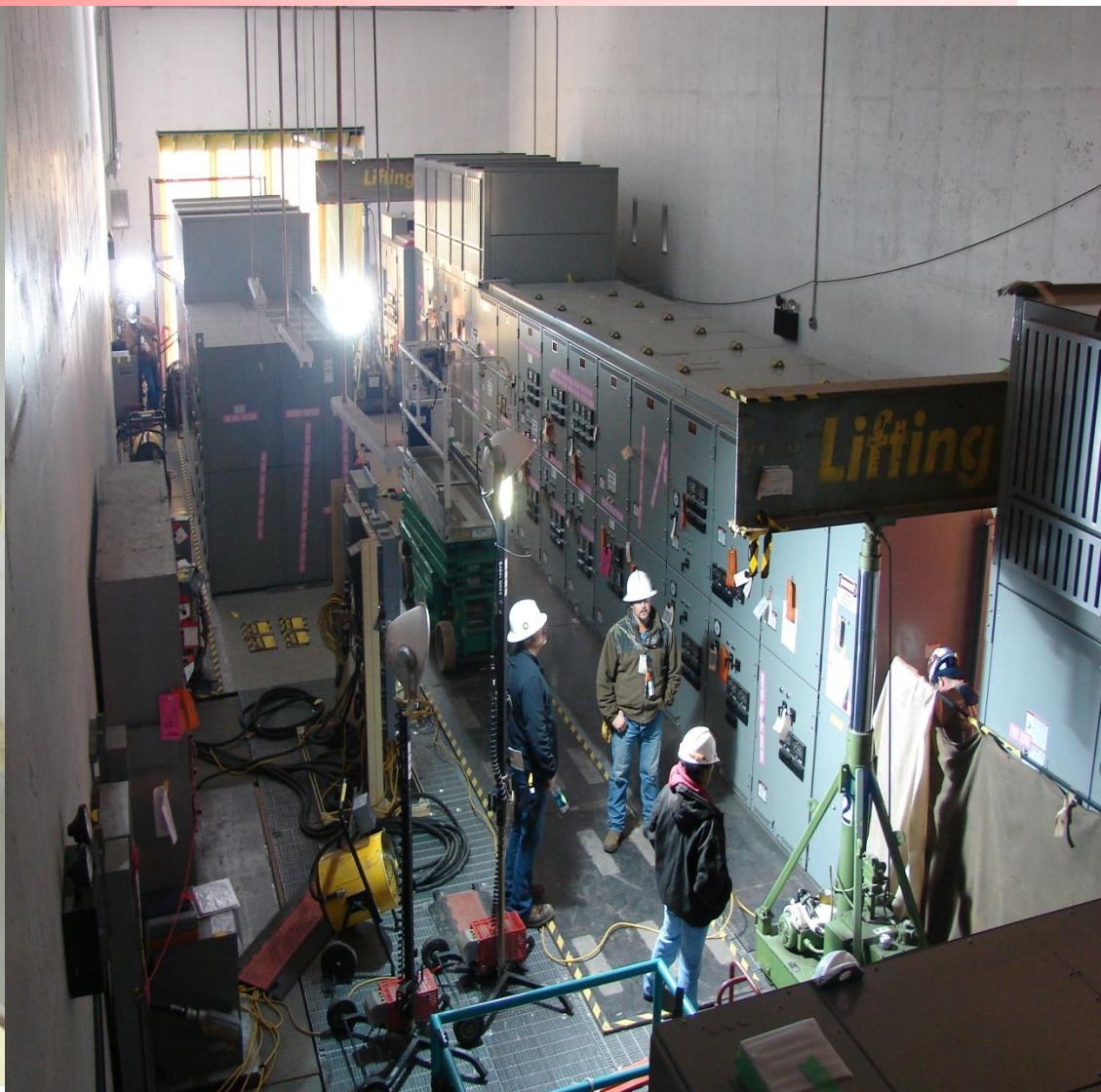


PSW Duct Bank Manhole 6 (01-26-10)

PSW Duct Bank Manhole 6 (12-30-11)



PSW Building Internals (01-26-10)



PSW Building Internals (12-29-11)



Protected Service Water

Key Take Aways

❖ Continued Focus on Nuclear Safety Risk and Quality

- ❖ **Implementation Risk Management** - daily independent reviews of complex plan restrictions and contingencies

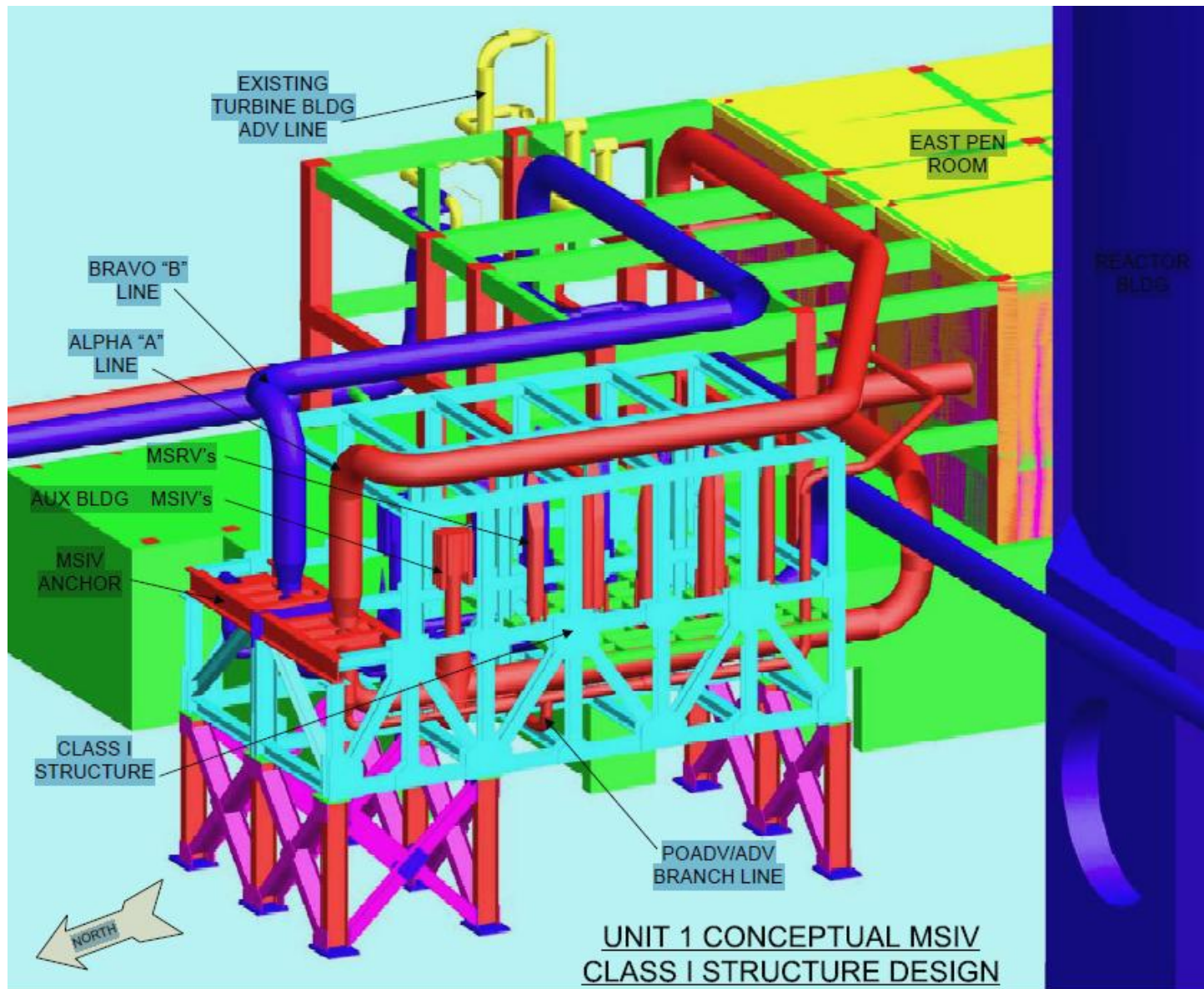
❖ Efforts to Ensure Project Success

- ❖ All major infrastructure construction is complete (PSW Building structure and Duct Bank)
- ❖ All construction scope responsibility moved to OMP* self perform implementation team
- ❖ 32 dedicated engineering personnel added for support in procurement, design and implementation support activities
- ❖ Dedicated project teams established for major focus areas- providing prompt problem solving and decision making
- ❖ Dedicated procurement team with a senior Duke manager responsible for all procurement activities
- ❖ Additional dedicated project team resources deployed to supplier shops to expedite equipment delivery
- ❖ Additional senior leadership for project oversight and barrier removal
- ❖ Additional craft resources
- ❖ Daily senior management update for timely resource reallocation, barrier removal, and oversight
 - ❖ Duke VP of Major Projects, and Duke Senior VP

❖ Project Status

- ❖ Initial Scope Approved
- ❖ MSIV Purchase Order issued to Enertech for Gas-Hydraulic Actuator Valves
- ❖ The Steam Generating Team (SGT) selected as Engineering, Procurement and Construction (EPC) contractor
- ❖ Detailed Scope being developed

Duke Energy Main Steam Isolation Valves (MSIVs)



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Licensing Update

Dave Baxter,
Vice President, Nuclear Engineering

❖ Regulatory Status

- ❖ Tornado LAR* submitted 6/26/2008; Review in progress
- ❖ Fiber Reinforced Polymer LARs; Approved

❖ Project Status

- ❖ Natural Phenomena Barrier System (NPBS); complete
- ❖ Protected Service Water System; construction in progress
- ❖ Main Steam Isolation Valves; design in progress
- ❖ SSF Equipment Door Protection; design in progress

* LAR = License Amendment Request



High Energy Line Break

❖ Regulatory Status

- ❖ LARs submitted; Unit 1 6/2008; Unit 2 12/2008; Unit 3 6/2009
- ❖ NRC review in progress
- ❖ Responded to most recent set of RAIs 12/16/2011

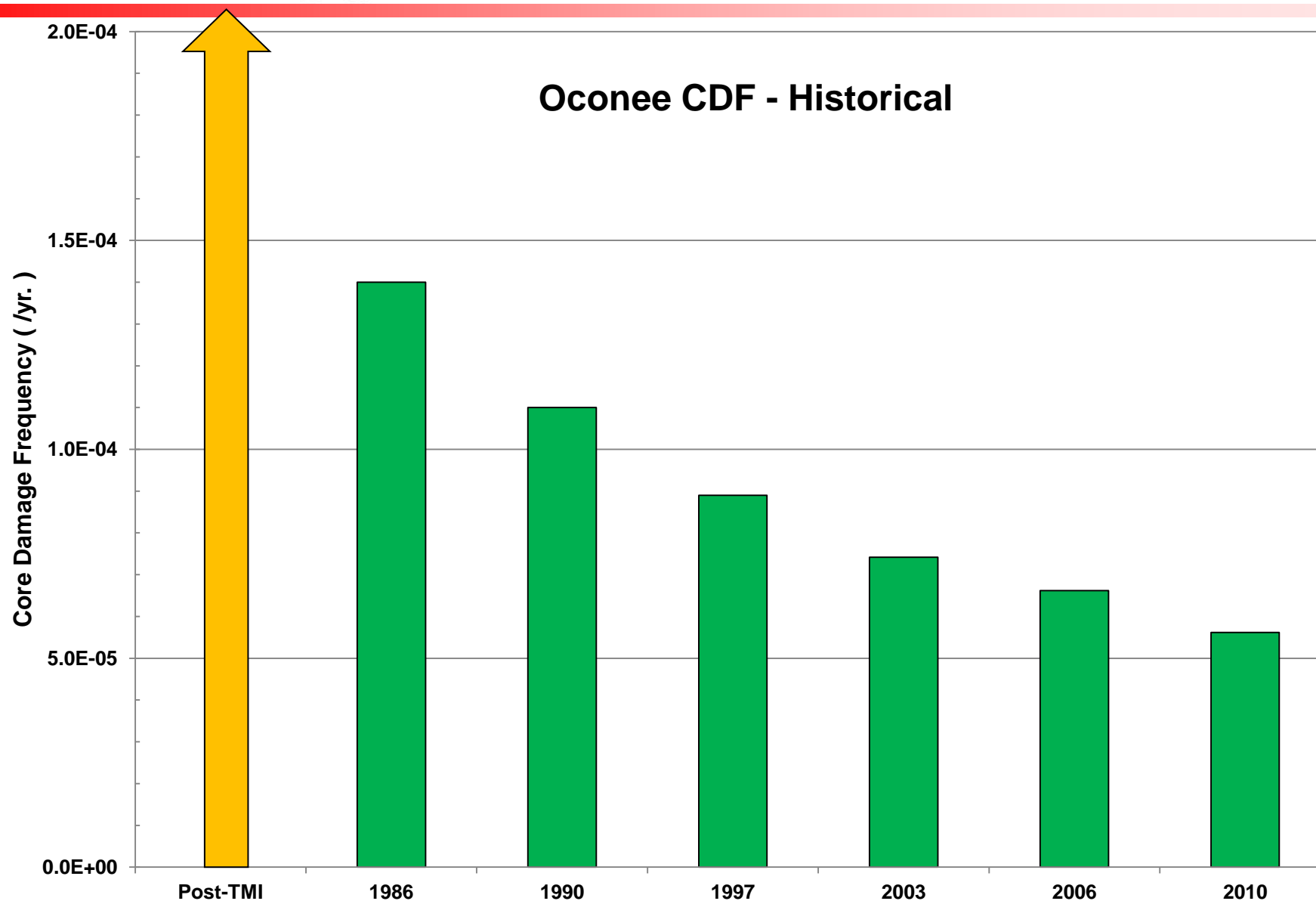
❖ Project Status

- ❖ Feedwater and Main Steam Pipe Weld Inspections; complete
- ❖ East Penetration Room Flood Modifications; complete
- ❖ Protected Service Water System; construction in progress
- ❖ Main Steam Isolation Valves; design in progress
- ❖ Other modifications to be implemented following LAR approval
 - ❖ Letdown Cooler Isolation Valves Upgrade
 - ❖ Control Complex Ventilation Isolation
 - ❖ High Pressure Injection Suction Header Isolation Valves Upgrade
 - ❖ Turbine Building column reinforcements
 - ❖ Condenser Circulating Water Stop Gate Upgrade



Closing Remarks

Preston Gillespie,
Vice President, Oconee Nuclear Station





Closing Remarks

Looking forward

2012	2013	2014	2015	2016
PSW Completion				
NFPA-805 Implementation				
		MSIV Unit 1	MSIV Unit 2	MSIV Unit 3
RPS/ES Unit 3	RPS/ES Unit 2			



Closing Remarks

NRC