UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 8, 2012

LICENSEE: Duke Energy Carolinas, LLC

FACILITY: Oconee Nuclear Station, Units 1, 2, and 3

SUBJECT: SUMMARY OF JULY 11, 2012, MEETING WITH DUKE ENERGY CAROLINAS, LLC, TO DISCUSS ONGOING MAJOR PROJECTS AT OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3

On July 11, 2012, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Duke Energy Carolinas, LLC (the licensee) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to allow the licensee to update the NRC staff on the status of the ongoing major projects at the Oconee Nuclear Station, Units 1, 2, and 3 (ONS 1/2/3). A list of attendees is enclosed.

The licensee presented a summary of the status of the following major projects which are ongoing at ONS 1/2/3:

- Digital Reactor Protective System (RPS) and Engineered Safeguards (ES) system
- Protected Service Water (PSW) system
- National Fire Protection Association (NFPA) Standard 805 Transition
- Installation of Main Steam Isolation Valves (MSIVs)

The licensee is currently replacing the existing RPS and ES systems in all three Oconee units with new state of the art digital systems. These systems are used to automatically actuate reactor shutdown and actuate ES systems if needed to maintain the reactors in a safe and stable condition. The licensee stated that the new RPS and ES systems are now operational in Units 1 and 3, with installation planned for Unit 2 during the fall 2013 refueling outage.

The licensee is in the process of installing a new PSW system. The PSW system is a diverse system to other plant systems for the mitigation of fires and high energy line breaks (HELBs). The PSW system consists of new electrical power supplies for existing plant safety systems, as well as a replacement pump for the station auxiliary service water pump, which adds water to the steam generators in order to remove decay heat from the reactor coolant system once the reactor is shutdown, if the normal plant systems are not available. The installation of the PSW system will reduce the overall plant risk in the event of a fire or HELB at the Oconee site. During the meeting, the licensee indicated that although the majority of the system has been installed, they are experiencing delays in completing the PSW system installation. The licensee will submit a formal request to the NRC to extend the required completion date of January 1, 2013.

ONS 1/2/3 was one of two pilot plants that are in the process of transitioning to NFPA 805 for compliance with the NRC fire protection regulations, Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.48. The NRC staff completed its review of the license amendment request requesting approval of the transition, and issued the license amendments approving the transition on December 29, 2010 (Agencywide Documents Access and Management System Accession No. ML103630612). The licensee indicated during the meeting that they are working on the modifications required by the license amendments, but may need additional time to complete some of the modifications, such as the PSW system and the fire detection improvements.

The licensee plans to install new MSIVs for all three Oconee units. The MSIVs will provide additional margin to ensure HELBs can be mitigated. During the meeting, the licensee stated that the target date to submit a license amendment request to the NRC is January 2013. The MSIVs have been ordered from a vendor, and a detailed scope for the MSIVs installation is being developed.

No members of the public were in attendance at the meeting. Public Meeting Feedback forms were made available at the meeting. As of the date of this meeting summary, no feedback forms have been received. The NRC and the licensee also held a non-public portion of the meeting. This portion of the meeting was closed to the public because sensitive security-related information was discussed.

Please direct any inquiries to me at 301-415-2901, or by email to John.Boska@nrc.gov.

John P. Boska, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosures:
1. List of Attendees
2. Licensee's Handout

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

MEETING ATTENDANCE FORM

Subject: Oconee Nuclear Station Major Projects Meeting

Date: July 11, 2012 Location: OWFN, room O-13B4

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NAME	ORGANIZATION
John Boska	NRC / NRR / DORL
William Jones	NRC / RII / DRP
Leonard Wert	NRC / RII / ORA
Nancy Salgado	USNRC / NRR / DORL
Jonathan Bartley	US NRC / RII / DRP
JACK DAVIS	NRC / NRR / DSS
Robert Pascarelli	NRC / NRR / JLD
Regis T. Repko	DUKE ENERGY
Bill Pitesa	Duke Energy
PRESTON GILLESPIE	DUKE ENERGY
Scott Lynch	DUKE ENERGY
Dave Baxter	Duke Energy
Michele Evans	NRC/NRR/DORL
DAN DORMAN	NRC/NRR
ERIC LEEDS	NRC/NRR
CHRIS Nolan	DUKE ENERGY
JEREMY SUSCO	NRC/NRR
STEPHANIE COFFIN	NRC/NRR/DORL
Mike Cheok	NRC/NRR/DE
SCOTT FLANDERS	NRC/NRO/DSEA
DAVID SKEEN	NRC/NRR/JLD

Duke Energy

Oconee Nuclear Station

Major Project Plans

NRC Headquarters

One White Flint North

Rockville, MD

July 11, 2012

For Information Only

Agenda

- **Introductions/Opening Remarks – Preston Gillespie**
- **Projects/Licensing Update – Scott Lynch / Dave Baxter**
- **Duke Energy Closing Summary – Bill Pitesa**
- **Turn Over to NRC**

Duke Attendees

Bill Pitesa, Sr. VP, Nuclear Operations

Regis Repko, Sr. VP, Nuclear Operations

Preston Gillespie, Site VP, Oconee Nuclear Station

Dave Baxter, VP, Nuclear Engineering

Chris Nolan, Director, Regulatory Affairs

Scott Lynch, General Manager, Oconee Major Projects

Opening Remarks

Preston Gillespie

Vice President, Oconee Nuclear Station

Projects/Licensing Update

Scott Lynch,

General Manager, Oconee Major Projects

Dave Baxter,

VP, Nuclear Engineering

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

- Benefits
  - Addresses Long Term Obsolescence
  - Improves the Reliability of the RPS/ES System
  - Improves Monitoring of the RPS/ES System
  - Improves Overall Plant Safety
- Project update
  - Unit 1 RPS/ES Installation Complete (Spring 2011)
  - Unit 2 RPS/ES Installation - Scheduled for Fall 2013
  - Unit 3 RPS/ES Installation Complete (Spring 2012)
    - Lessons learned from the U1 installation were incorporated into the U3 installation resulting in a more predictable installation.
    - Lessons learned from U3 will be incorporated into the U2 installation

Received NEI Top Industry Practice Award

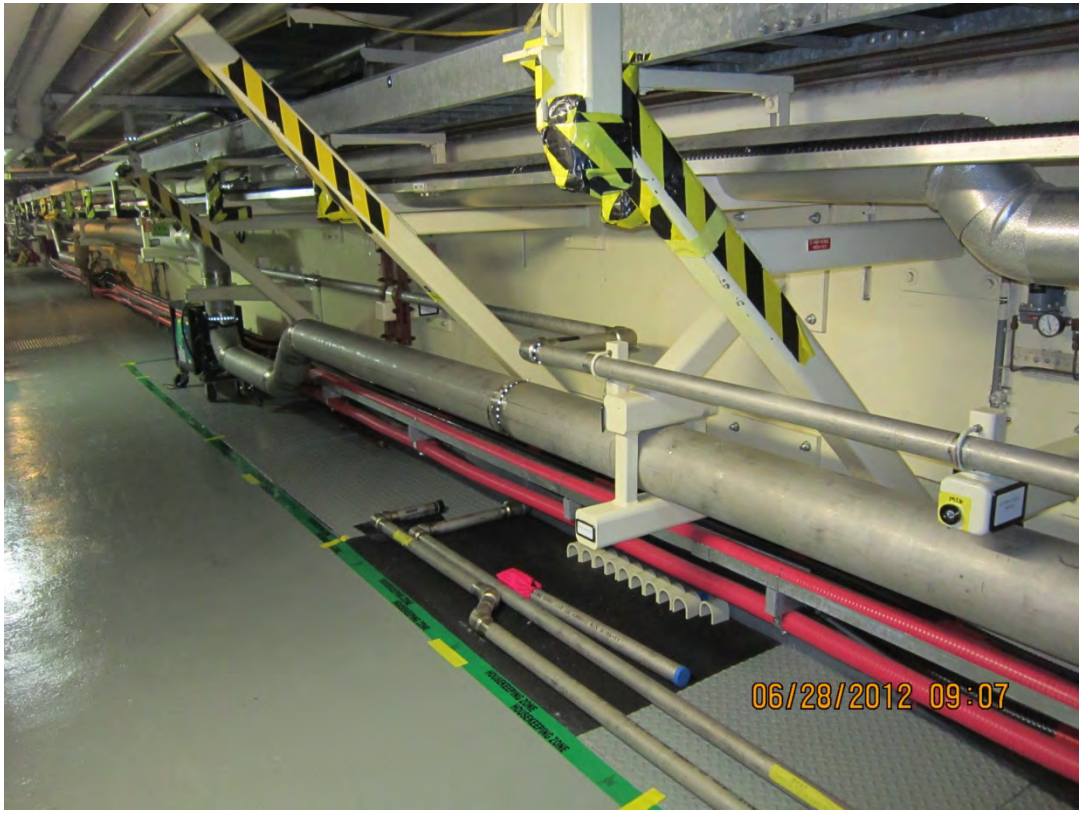
Vision and Leadership Best of the Best

Protected Service Water

Progress Photos

Photos from 6/28/12

PSW Cable Tray Installation
Auxiliary Building



PSW Pipe Installation
Auxiliary Building

Protected Service Water

Progress Photos

Photos from 6/28/12

PSW Building Equipment

PSW Duct bank Manhole Cover

Protected Service Water

Progress Photos

Photos from 6/28/12

PSW Pump

First Equipment energized in PSW Building : Motor Control Center XPSW

Protected Service Water

Progress Photos

Photos from 6/28/12

Breakers at Keowee

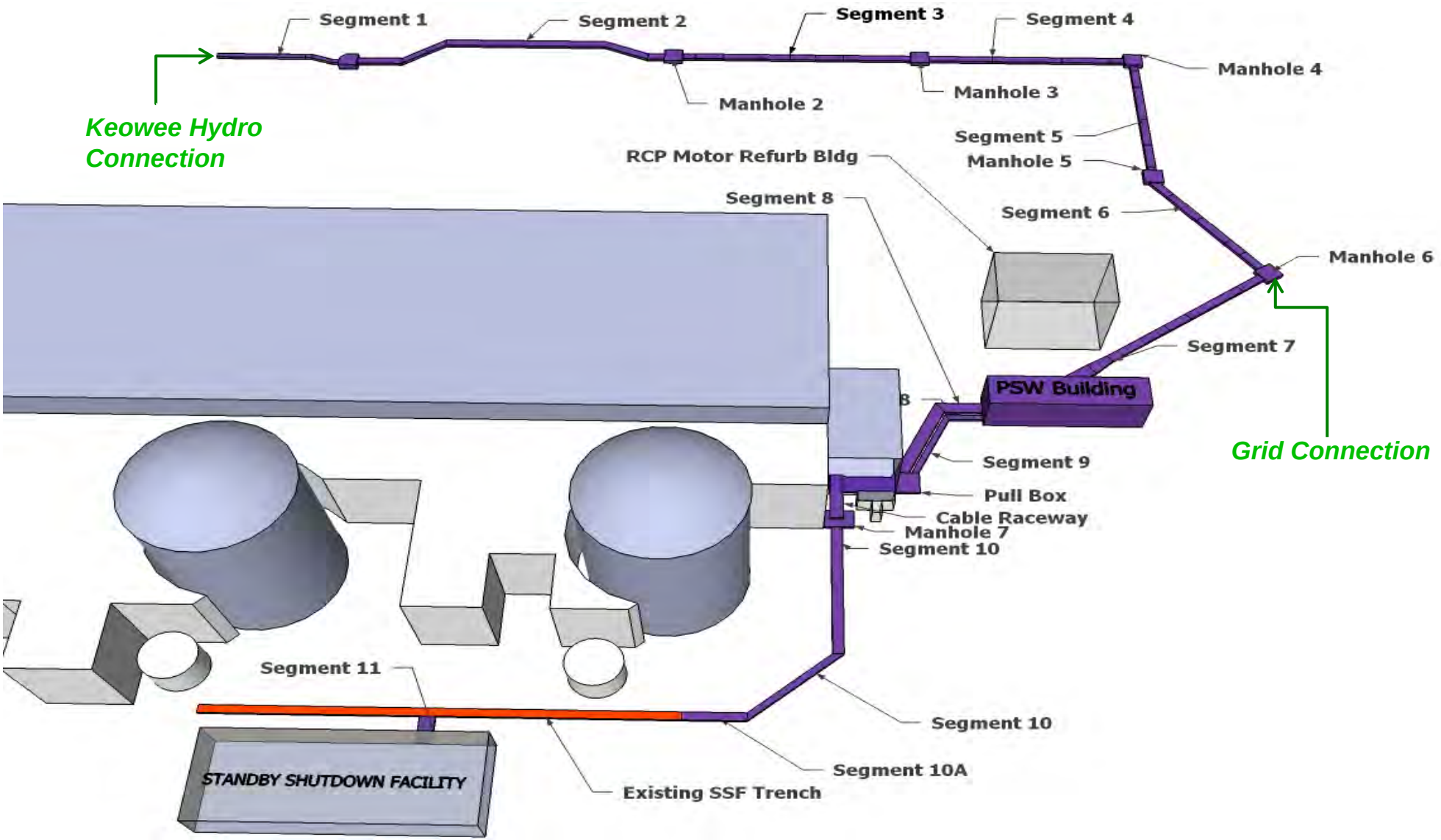
PSW Booster Pump

Protected Service Water
Status Overview

- PSW is ~86% Complete
- Major activities coming up
  - Back-up feed from the PSW building to the SSF
  - Power from Keowee to the PSW building equipment
  - PSW pump and piping installation
  - PSW Licensing Activities
- Project Challenges
  - Equipment procurement delays
  - Environmental temperature qualification issues

Protected Service Water

Project Status Overview



Completed Scope Since January 2012 Update

- Unit 3 High Pressure Injection (HPI) repowering outage scope
  - Main Control Board modifications
  - Transfer switch installation and testing
  - HPI Valve installation and testing
- Units 3 HPI repowering cables between PSW and Auxiliary Buildings
- Units 3 HPI components powered up and tested on temporary power
- PSW Building power delivery equipment connected
- SSF cable pulled through the duct bank from the PSW building to the SSF
- XPSW Motor Control Center Powered up
- Keowee Emergency Start cable reroute and non-outage related wire terminations
- Keowee AC Power Breakers installed for Keowee feed to the PSW building
- Fabricated Duct Bank manhole and trench covers

Protected Service Water

Project Status

In Progress

- Remaining Engineered Equipment manufacturing and delivery
- Final Engineering design completion
- Protected Service Water (PSW) Building equipment testing
- 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 rerouting
- Underground Grid connection line installation

Remaining Scope to be Completed

- Provide backup power from PSW Building to the SSF through new breaker installed in the SSF
- Units 1 and 2 Keowee Outages including Post Mod Testing
  - Disconnect existing Keowee emergency start cables and perform terminations for the newly rerouted cables
  - Provide back-up power from two new breakers installed at Keowee to the PSW building
- Station ASW pump room demolition and new PSW pump installation
  - Remove Station ASW pump, replace with PSW and PSW Booster pump
  - Reroute associated piping
- Power Up PSW Building equipment and test
- Online Projects (Pressurizer heater power, Vital I&C battery charger power/cable reroute, fire detection, underground grid connection)

Challenges

- **Procurement Document Processing –** Mitigation strategy: 1) Added more engineering resources from other projects to review and process documents. 2) Maintain presence in vendor shops to ensure the correct priority is given to our equipment documentation cycle time and quality.

- **Engineered Equipment Delivery –** Mitigation strategy: 1) Major Projects Management and expeditors continue to travel to vendor shops on a regular basis. 2) Major Projects craft crews are sent to the vendor shops to perform point to point wiring checks to ensure quality before the equipment is shipped.

- **Completion of Engineering Change Packages** – Timely delivery of vendor documents continue to challenge completion of the engineering packages. Mitigation strategy: 1) Adding engineering resources to the project both at Duke and in the vendor shops. 2) Sending resources to vendor's shops to shorten document cycle time.

Challenges (Cont'd)

- **Environmental Temperature** – Issues related to environmental temperature qualification of PSW-related components in the auxiliary building and reactor building have been identified; those issues must be resolved to support project completion by the end of 2012
  - Contracted subject matter expert to perform the building heat-up models to more accurately determine temperature profiles due to the PSW event
  - Developing a contingency LAR to support NFPA 805

Protected Service Water
Key Takeaways

- **Efforts to Ensure Project Success**
  - Dedicated Licensing team
  - Additional engineering resources have been contracted and engineers from other projects have been moved to the project.
  - Dedicated project teams established for completing remaining engineering packages
  - 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
  - Dedicated team in place to resolve elevated environmental temperatures in the Auxiliary and Reactor Buildings for the PSW Pump modification.
  - Daily senior management update for timely resource reallocation, barrier removal, and oversight
    - Duke VP of Major Projects, and Duke Senior VP

Protected Service Water Licensing Update

- High Energy Line Break (HELB) *LARs submitted
  - Unit 1 6/2008; Unit 2 12/2008; Unit 3 6/2009
  - NRC review in progress
  - Consolidated re-submittal - 12/16/2011
  - Response to final set of RAIs 7/11/2012

- Tornado LAR submitted 6/26/2008
  - NRC review in progress
  - Repackaged submittal

*LAR = License Amendment Request

Protected Service Water Licensing Update

- Licensing approach (in order of priority)
  - PSW UFSAR changes
  - PSW Technical Specifications
  - HELB
  - Tornado
- Initial NRC Safety Evaluation (SE) to address first two items
  - Targeted SE completion for August 2012
  - Depends on Duke delivering necessary information
- Separate NRC Safety Evaluations for HELB and Tornado

*NFPA 805 Transition

- Project Status
  - Impact of the Protected Service Water System project
  - Committed Modifications to be completed per SE status
    - Blockhouse Pressure Relief Shafts Upgrade - Complete
    - Purge Inlet Room/Auxiliary Building Fire Barrier Upgrade – June 2014
    - Turbine/Auxiliary Building Wall Fire Barrier Upgrade – December 2013
    - General Area/Hazard Fire Detection Improvements – Spring 2016
  - Program Implementation
    - Two year implementation window – ONS on track to complete on schedule
    - Program implementation items from SE are integrated with the project plan

*NFPA – National Fire Protection Association

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*NFPA 805 Transition

- Contingency Plan - NFPA 805 License Conditions
  - Will submit LAR to change License Conditions by 7/31/12
    - Pre-submittal meeting scheduled for 7/19/12
    - Self approval will require another LAR submittal upon completion of PSW
- Partial Scope implementation of PSW
  - Risk benefit sufficient to meet NFPA 805 requirements
  - PSW Partial Scope includes:
    - Power from 100kV source
    - Power from Keowee Hydro Units
    - Backup Power to Standby Shutdown Facility
    - Backup Power to High Pressure Injection Pump
  - 10CFR50.59 review of PSW Partial Scope in progress
  - NRC review / approval may be necessary
  - May require hold or delay in implementation of PSW UFSAR

*NFPA – National Fire Protection Association

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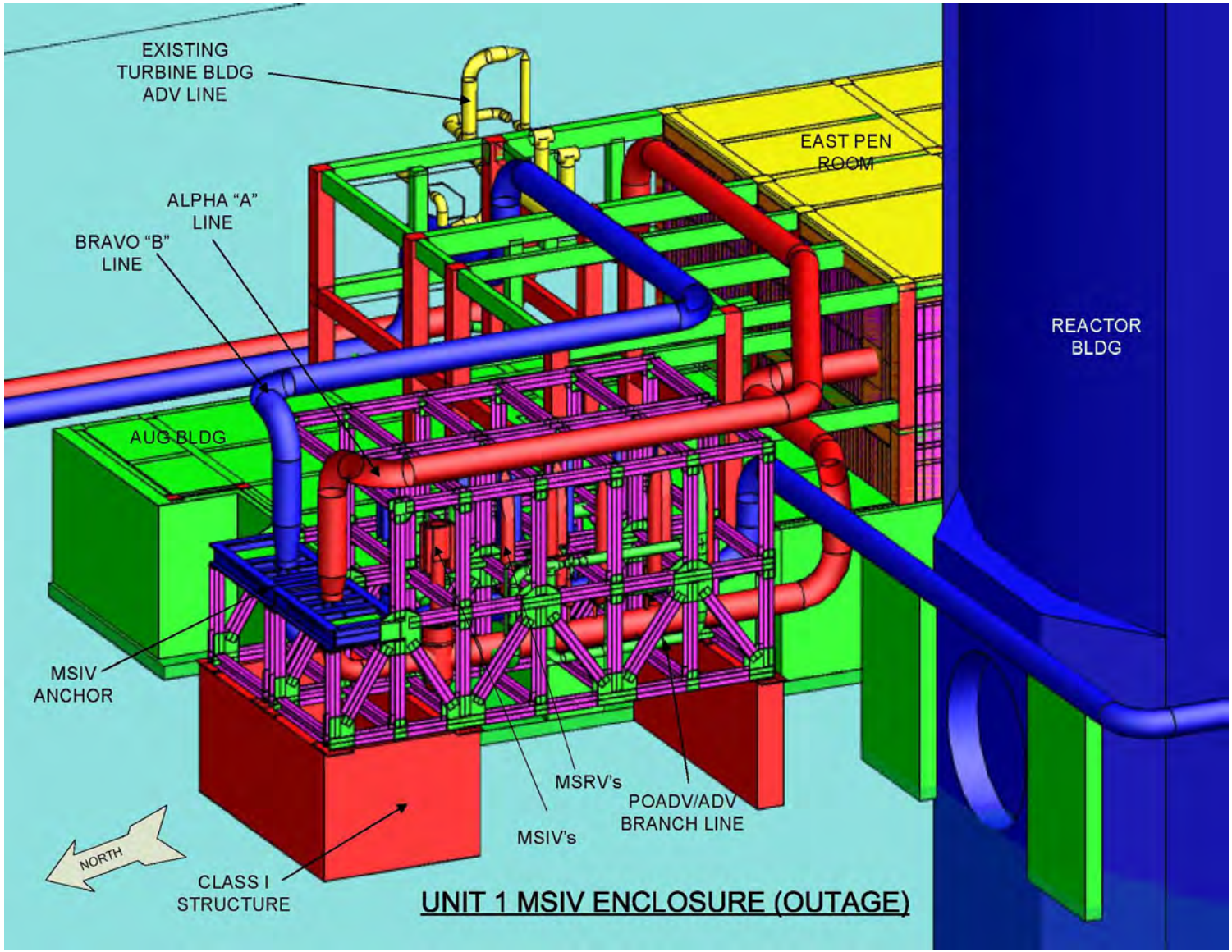
Main Steam Isolation Valves (MSIVs)



Main Steam Isolation Valves (MSIVs)

- Design & Licensing
  - Duke and The Steam Generating Team (SGT) continuing to finalize the detailed project scope
    - Detailed engineering in progress
    - Engineering change package development in progress
  - Held first Pre-Submittal meeting with NRC on License Amendment Request (LAR) in support of installation of the MSIVs

    Meeting results:
    - Address the effect MSIVs have on *TDEFW steam supply
    - Address if a Technical Specification for MSIVs is needed for this LAR
    - Address 50.59 applicability for MSIV installation
    - LAR submittal target date is January 2013

* TDEFW = Turbine Driven Emergency Feedwater

Main Steam Isolation Valves (MSIVs)

- Procurement
  - EPC Contractor selection is complete (SGT)
  - Purchase Order for MSIVs issued to Enertech; fabrication of the MSIVs has been initiated
  - Finalizing the vendor selection for the Power Operated Atmospheric Dump Valves

Major Projects Projects
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 (Complete)	RPS/ES Unit 2			

Closing Summary

Bill Pitesa,

Sr. VP, Nuclear Operations

Turn Over to NRC

NRC Comments and discussion

ONS 1/2/3 was one of two pilot plants that are in the process of transitioning to NFPA 805 for compliance with the NRC fire protection regulations, Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.48. The NRC staff completed its review of the license amendment request requesting approval of the transition, and issued the license amendments approving the transition on December 29, 2010 (Agencywide Documents Access and Management System Accession No. ML103630612). The licensee indicated during the meeting that they are working on the modifications required by the license amendments, but may need additional time to complete some of the modifications, such as the PSW system and the fire detection improvements.

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/RA/

John P. Boska, Senior Project Manager
Plant Licensing Branch II-1
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Docket Nos. 50-269, 50-270, and 50-287

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Notice ML12174A008 Summary & Public Slides ML12216A114 Non-Public Slides ML12215A327

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NAME	JBoska	SFigueroa	NSalgado (RMartin for)	JBoska
DATE	08/07/12	08/06/12	08/08/12	08/08/12

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