

October 21, 2011

MEMORANDUM TO: Darrell J. Roberts, Director
Division of Reactor Projects

FROM: Arthur L. Burritt, Chief **/RA/**
Projects Branch 3

SUBJECT: SUMMARY OF SEPTEMBER 28, 2011 PSEG DROP-IN VISIT

On September 28, 2011, Mr. Tom Joyce, President and Chief Nuclear Officer, Mr. Robert Braun, Senior Vice President Nuclear Operations, Mr. John Perry, Vice President of Hope Creek, Mr. Paul Davison, Vice President of Operations Support, Mr. Larry Wagner, Plant Manager Salem Units 1 and 2, Ms. Anndria Gaerity, Director of Emergency Services, and Ms. Christine Neely, Director of Regulatory Affairs, all representing PSEG Nuclear LLC, met with the Regional Administrator and members of the Region I staff at the NRC offices in King of Prussia, PA. PSEG requested the meeting to provide a general update on the status of Hope Creek and Salem.

During the meeting, the following topics were discussed:

1. Plant performance updates for Salem and Hope Creek;
2. Key Personnel Staffing Changes at Salem and Hope Creek;
3. Security updates;
4. Fukushima Response;
5. New nuclear plans; and
6. Stakeholder outreach activities.

The meeting began at 10:00 a.m. and ended at 12:30 p.m. No regulatory decisions were requested or made during the meeting and there were no commitments for any follow-up actions on the part of Region. The slides used by PSEG to conduct the briefing are enclosed with this memorandum.

Enclosure: As stated

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DATE	10/20 /11	10/21 /11

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PSEG Nuclear NRC Region I Update

Tom Joyce, President & CNO

Robert Braun, Senior Vice President Nuclear Operations

John Perry, Vice President Hope Creek

Paul Davison, Vice President Operations Support

Larry Wagner, Salem Plant Manager

Anndria Gaerity, Director Emergency Services

Christine Neely, Director Regulatory Affairs

September 28, 2011

Agenda

Introductions	Tom Joyce
Overview	Bob Braun
Hope Creek Performance Update	John Perry
Salem Performance Update	Larry Wagner
Security Update	Anndria Gaerity
Fukushima Response	Paul Davison
New Nuclear	Christine Neely
Closing Comments	Tom Joyce

**OPERATIONAL
FOCUS**

**LEARNING
ORGANIZATION**

EXCELLENCE

Set the Standard

Learn from Others

Learn from Yourself

THE
Journey
to
EXCELLENCE
REQUIRES A STRONG
BASE CAMP



Objectives

2011

Safety Excellence

Equipment Reliability Excellence

Refueling Outage Excellence

Environmental Excellence

Developing Our People

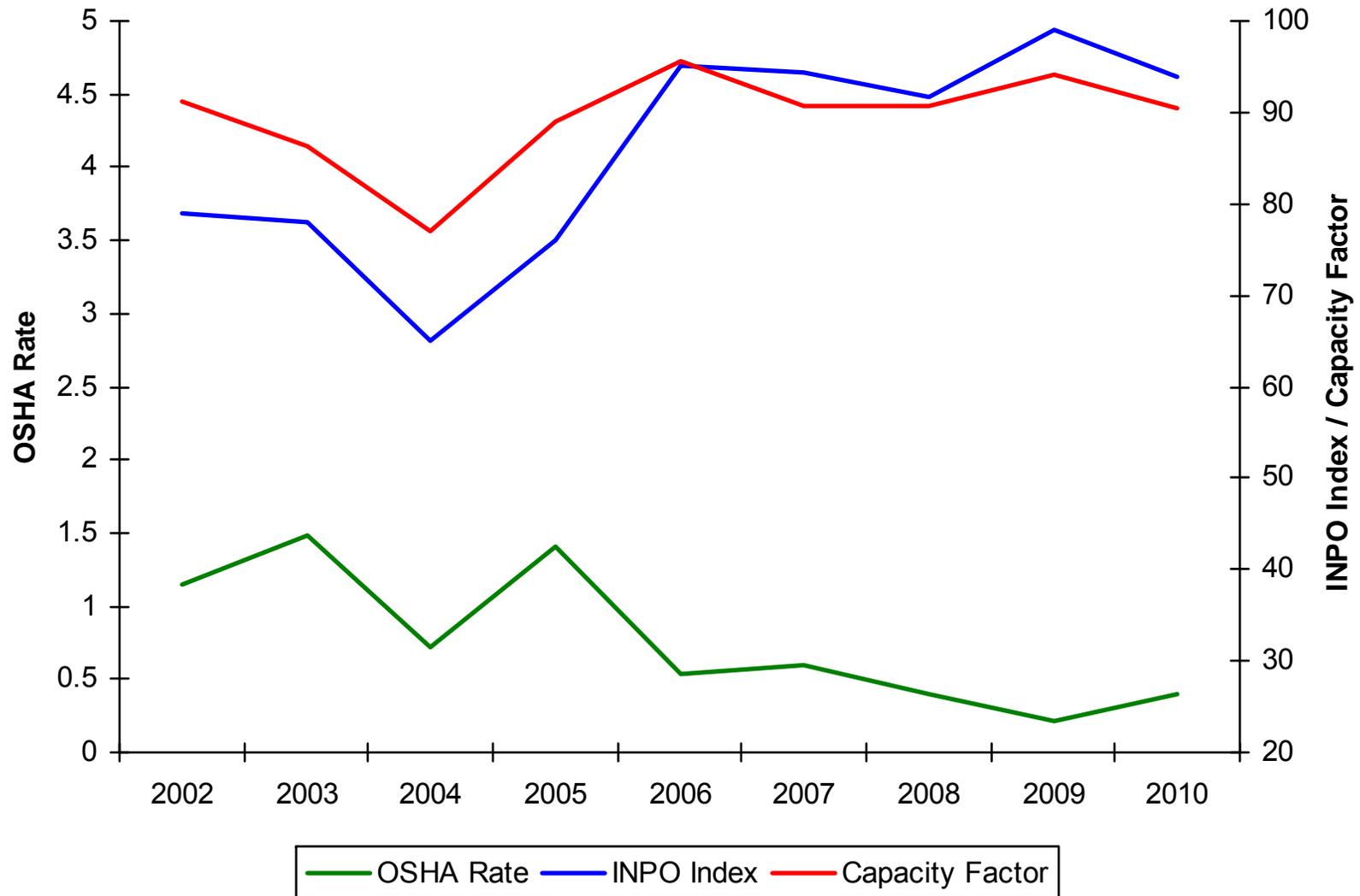
Running the Business



PSEG
Nuclear LLC



PSEG OSHA Rate vs. INPO Index / Capacity Factor



Staffing Changes

Staffing Changes to Assure Alignment, Continuous Improvement and Development of our People:

- Plant Managers at both Salem and Hope Creek
- Director Emergency Services
- Corporate Manager Learning Programs
 - Experienced technical specialist staff
- Director Special Projects (Fukushima)
- Manager Environmental Affairs
 - Centralized environmental staff



Hope Creek

Performance Update

John Perry

Hope Creek 2011 Scorecard

Hope Creek 2011 Balanced Scorecard August

August YTD

PEOPLE PROVIDING	Hope Creek					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Hope Creek
OSHA Recordable Incidence Rate	L	0.29	0.19		0.19	0.00
OSHA Days Away From Work Rate	L	0.00	0.00		0.00	0.00
Nuclear Availability	H	96.8%	97.6%		97.6%	97.1%
Total Industrial Safety Accident Rate	L	0.15	0.08		0.08	0.07
Workforce Qualifications	H		95%		55%	100%

TOTAL NUCLEAR METRIC

SAFE, RELIABLE	Hope Creek					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Hope Creek
INPO Performance Index	H	N/A	94.5		94.5	99.7
Equipment Reliability Index (Rev 6)	H	85.0	88.0		88.0	98.0

ECONOMIC	Hope Creek					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Hope Creek
O&M Budget Controllable (\$M)	L	\$278	\$443		\$290	\$289
Total Generation (GWh)	H	6,758	10,422		6,934	6,943
Summer Generation	H	2,499	2,590		2,590	2,612
Capital Plan Versus Actual	R	\$20	\$35		\$20	\$11
Capital Project Cost Performance (Quarter + 1 month lag)	H	N/A	95		95	100

TOTAL NUCLEAR METRIC

TOTAL NUCLEAR METRIC

GREEN ENERGY	Hope Creek					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Hope Creek
Reportable Incidents and NOV's	L	1	1		1	0
Waste - Percent Landfill Disposal	L	31.4%	24.5%		24.5%	24.6%
Waste & Utility Cost (\$M)	L	N/A	\$4.8		\$3.2	\$1.6
Radiological Effluent (1 month lag)	L	N/A	1,572		917	825
Regulatory Performance	-	Green	Green		Green	Green

TOTAL NUCLEAR METRIC

TOTAL NUCLEAR METRIC

TOTAL NUCLEAR METRIC

Month of August

PEOPLE PROVIDING	Hope Creek					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Hope Creek
OSHA Recordable Incidence Rate	L	2.34	0.19	0.19	+	0.00
OSHA Days Away From Work Rate	L	0.00	0.00	0.00	o	0.00
Nuclear Availability	H	96.8%	97.6%	97.6%	-	97.2%

TOTAL NUCLEAR METRIC

SAFE, RELIABLE	Hope Creek					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Hope Creek
INPO Performance Index	H	N/A	94.5			
Equipment Reliability Index (Rev 6)	H	85.0	88.0			

ECONOMIC	Hope Creek					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Hope Creek
O&M Budget Controllable (\$M)	L	\$28	\$443	\$33	+	\$32
Total Generation (GWh)	H	845	10,422	871	+	881
Summer Generation	H	845	2,590	871	+	881

TOTAL NUCLEAR METRIC

GREEN ENERGY	Hope Creek					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Hope Creek
Reportable Incidents and NOV's	L	0	1	0	o	0

Legend:

Year-End Forecast: ■ Expected to meet goal

■ Achievement of goal not yet assured

■ Not expected to meet goal

■ N/A

Monthly Status: + Better than plan

o On plan

- Worse than plan

■ N/A

2011 Equipment Reliability Index (ERI) Performance Hope Creek

Area	ERI Sub-Indicator No.	ERI Sub-Indicators	ERI Points Maximum	HOPE CREEK
Electric Generation (Lagging)	1.1	Forced Loss Rate (Industry definition - 18 mo running average)	10	10
	1.2	Unplanned Power Reductions per 7000 hrs Critical (NRC Indicator)	10	10
	1.3	Post Refueling Outage Performance (100 Days)	2	2
Challenge to Ops (Lagging)	2.1	Unplanned LCO Entries (S/D and \leq 72 hrs in last 3 months)	4	4
	2.2	Operator Work Arounds	2	2
	2.3	Critical Component Failures (in last 3 months)	10	8
System Health (Lagging)	3.1	Safety System Unavailability (NRC Indicators - MSPI)	8	8
	3.2	System Health Improvement Effectiveness	6	6
Maintenance (Leading)	4.1	Corrective Critical Work Backlog (Non-Outage)	4	4
	4.2	Deficient Critical Work Backlog (Non-Outage)	3	3
	4.3	Deferral of Critical PMs	6	6
	4.4	Maintenance Feedback (% of PMs with Feedback)	2	2
	4.5	Timely Completion of Critical PMs (1st Half of Grace)	4	4
Work Management (Leading)	5.1	Work Week Scope Survival (Average of last 3 months)	6	6
	5.2	Work Week Schedule Completion (Average of last 3 months)	6	6
Long Term Planning (Leading)	6.1	Long Range Plan Implementation Effectiveness	7	7
	6.2	Age of Red & Yellow Systems	6	6
Monitoring & Trending (Leading)	7.1	Chemistry Effectiveness Index	2	2
AP-913 Process (Leading)	8.1	PM Program Bases	2	2
85 to 100	GREEN	Leading Indicators	54	44
75 to 84	WHITE	Lagging Indicators	46	54
60 to 74	YELLOW	ERI Point Total	100	98
less than 60	RED	ERI Point Total Last Month	Jul-11	100
Industry Top Quartile	88	ERI Monthly / Year-End Goal		88

Hope Creek Plant Performance Issues

Main Steam Safety Valves

- Key learnings
- Actions taken
- Actions remaining

Emergency Diesel Generator Performance and Improvements

- Key learnings
- Actions taken
- Actions remaining

August 2011 External Events Response

- Key learnings
- Actions taken
- Actions remaining

Engineering Focus Area – Improving Technical Rigor

Actions Taken

- Trained on technical product selection, development and approval
- Implemented observation program and monthly performance data analysis
- Implemented new procedure on review of external technical products

Actions Remaining

- Perform effectiveness review

Hope Creek Key Events for 2011

- USA safety culture assessment
- Hope Creek PIRS inspection
- Complete pilot and fully implement Nuclear Safety Culture Monitoring Panel
- USA SOER 10-2 Management Systems Review
- March Planned Outage
- Emergency planning – New Jersey evaluated drill
- License Renewal
- Preparation for H1R17



Salem Performance Update

Larry Wagner

Salem 2011 Scorecard

Salem 2011 Balanced Scorecard August

August YTD

PEOPLE PROVIDING	Salem					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Salem
OSHA Recordable Incidence Rate	L	0.21	0.19		0.19	0.84
OSHA Days Away From Work Rate	L	0.00	0.00		0.00	7.93
Nuclear Availability	H	96.8%	97.6%		97.6%	97.1%
Total Industrial Safety Accident Rate	L	0.00	0.00		0.00	0.05
Workforce Qualifications	H		95%		54%	74%

TOTAL NUCLEAR METRIC

SAFE, RELIABLE	Salem					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Salem
INPO Performance Index	H	N/A	85.6		82.3	78.4
Equipment Reliability Index (Rev 6)	H	77.5	88.0		88.0	67.0

ECONOMIC	Salem					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Salem
O&M Budget Controllable (\$M)	L	\$278	\$443		\$290	\$289
Total Generation (GWh)	H	12,146	18,859		12,762	12,107
Summer Generation	H	4,541	5,028		5,028	4,740
Capital Plan Versus Actual	R	\$29	\$56		\$39	\$31
Capital Project Cost Performance (Quarter + 1 month lag)	H	N/A	95		95	100

TOTAL NUCLEAR METRIC

TOTAL NUCLEAR METRIC

GREEN ENERGY	Salem					
	L/H	2010 YTD	2011 Target	Year-End Forecast	YTD Plan	Salem
Reportable Incidents and NOV's	L	0	2		1	2
Waste - Percent Landfill Disposal	L	31.4%	24.5%		24.5%	24.6%
Waste & Utility Cost (\$M)	L	N/A	\$4.8		\$3.2	\$1.6
Radiological Effluent (1 month lag)	L	N/A	1,572		917	825
Salem Regulatory Performance	-	Green	Green		Green	Green

TOTAL NUCLEAR METRIC

TOTAL NUCLEAR METRIC

TOTAL NUCLEAR METRIC

Month of August

PEOPLE PROVIDING	Salem					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Salem
OSHA Recordable Incidence Rate	L	0.00	0.19	0.19	+	0.00
OSHA Days Away From Work Rate	L	0.00	0.00	0.00	-	53.54
Nuclear Availability	H	96.8%	97.6%	97.6%	-	97.2%

TOTAL NUCLEAR METRIC

SAFE, RELIABLE	Salem					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Salem
INPO Performance Index	H	N/A	85.6	82.3	-	78.4
Equipment Reliability Index (Rev 6)	H	77.5	88.0	88.0	-	67.0

ECONOMIC	Salem					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Salem
O&M Budget Controllable (\$M)	L	\$28	\$443	\$33	+	\$32
Total Generation (GWh)	H	1,707	18,859	1,687	+	1,701
Summer Generation	H	1,707	5,028	1,687	+	1,701

TOTAL NUCLEAR METRIC

GREEN ENERGY	Salem					
	L/H	2010 Month	2011 Target	Month Plan	Monthly Status	Salem
Reportable Incidents and NOV's	L	0	2	0	-	1

Legend:

Year-End Forecast: Expected to meet goal

Achievement of goal not yet assured

Not expected to meet goal

N/A

Monthly Status: + Better than plan

O On plan

- Worse than plan

N/A

2011 Equipment Reliability Index (ERI) Performance - Salem

Area	ERI Sub-Indicator No.	ERI Sub-Indicators	ERI Points Maximum	Owner	U1 AUG 2011	U2 AUG 2011	U1 SEPT 2011 Projection	U2 SEPT 2011 Projection	U1 Full Points To Achieve	U2 Full Points To Achieve	U1 2011 Year End Projections	U2 2011 Year End Projections
Elec. Generation (Lagging)	1.1	Forced Loss Rate (Industry definition - 18 mo running average) w/AND	10	Rajkowski	0	0	0	0	APR-2012	JAN-2013	0	0
	1.2	Unplanned Power Reductions per 7000 hrs Critical (NRC PI based on NEI 99-02)	10	Rajkowski	5 ↓	5	5	5	SEPT-2012	AUG-2012	5	5
	1.3	Post Refueling Outage Performance (100 days)	2	Sears	2	2	2	2			2	2
Challenge to Ops (Lagging)	2.1	Unplanned Shutdown & < 72-hour LCO Entries (in last 3 months) OM.01	4	Garecht	0 ↓	1 ↓	3	2 ↑	NOV-2011	NOV-2011	4	4
	2.2	Operator Work-Arounds (all types) OO.03	2	Garecht	2	2	2	2			2	2
	2.3	Number of High Critical Component Failures in last 3 months O.11	10	Rajkowski	4	4 ↓	2 ↓	8 ↑	DEC-2011	OCT-2011	10	10
System Health (Lagging)	3.1	Safety System Unavailability (NRC Indicators - MSP) R.1	8	Rajkowski	6	8	6	8	NOV-2013		6	8
	3.2	Sys Health Improvement Effectiveness (% of Actions Comp in Qtr) OE.03	6	Rajkowski	0 ↓	6 ↑	2 ↑	6 ↑	NOV-2011		6	6
Maintenance (Lagging)	4.1	Corrective Maintenance Backlog (Non-Outage) P.6	4	Vegner	4	4	4	4			4	4
	4.2	Total Maintenance Backlog (Non-Outage - CMs plus EMs) P.6	3	Vegner	3	3	3	3			3	3
	4.3	Deferral of PMs (Critical Equipment) PM.01	6	Sears	5 ↓	5 ↓	5	5	SEPT-2011	SEPT-2011	6	6
	4.4	Maintenance Feedback (Percentage of PMs with feedback)	2	Vegner	2	2	2	2			2	2
	4.5	Timely Completion of PMs (Critical PMs NOT completed within 1st half of grace - PM.01)	4	Vegner	3 ↑	3 ↑	3	3	NOV-2011	NOV-2011	4	4
Work Mgmt. (Leading)	5.1	Work Week Scope Survival (3 months) PM.04	6	Sears	5 ↓	5 ↓	5	5	DEC-2011	DEC-2011	6	6
	5.2	Work Week Schedule Completion (Average of last 3 months) PM.04	6	Sears	6 ↑	6 ↑	6	6			6	6
Long Term Planning (Leading)	6.1	Long Range Plan Implementation Effectiveness	7	Valcich	7	7	7	7			7	7
	6.2	Age of Red & Yellow Systems OE.03	6	Rajkowski	4	6	5 ↑	6	SEPT-2011		6	6
Chemistry (Leading)	7.1	Chemistry Effectiveness Index (CEI)	2	Pgle	1	2	1	2	FEB-2012		1	2
AP-913 Config. Mgmt (Leading)	8.1	PM Program Bases (Qualitative status of overall process at station)	2	Rajkowski	2	2	2	2			2	2
ERI Point Total			100		61	73	65	78			82	85
2011 ERI Goal = 88					67		71.5		83.5			

Salem Plant Performance Issues

Service Water Performance and Improvements

- Key learnings
- Actions taken
- Actions remaining

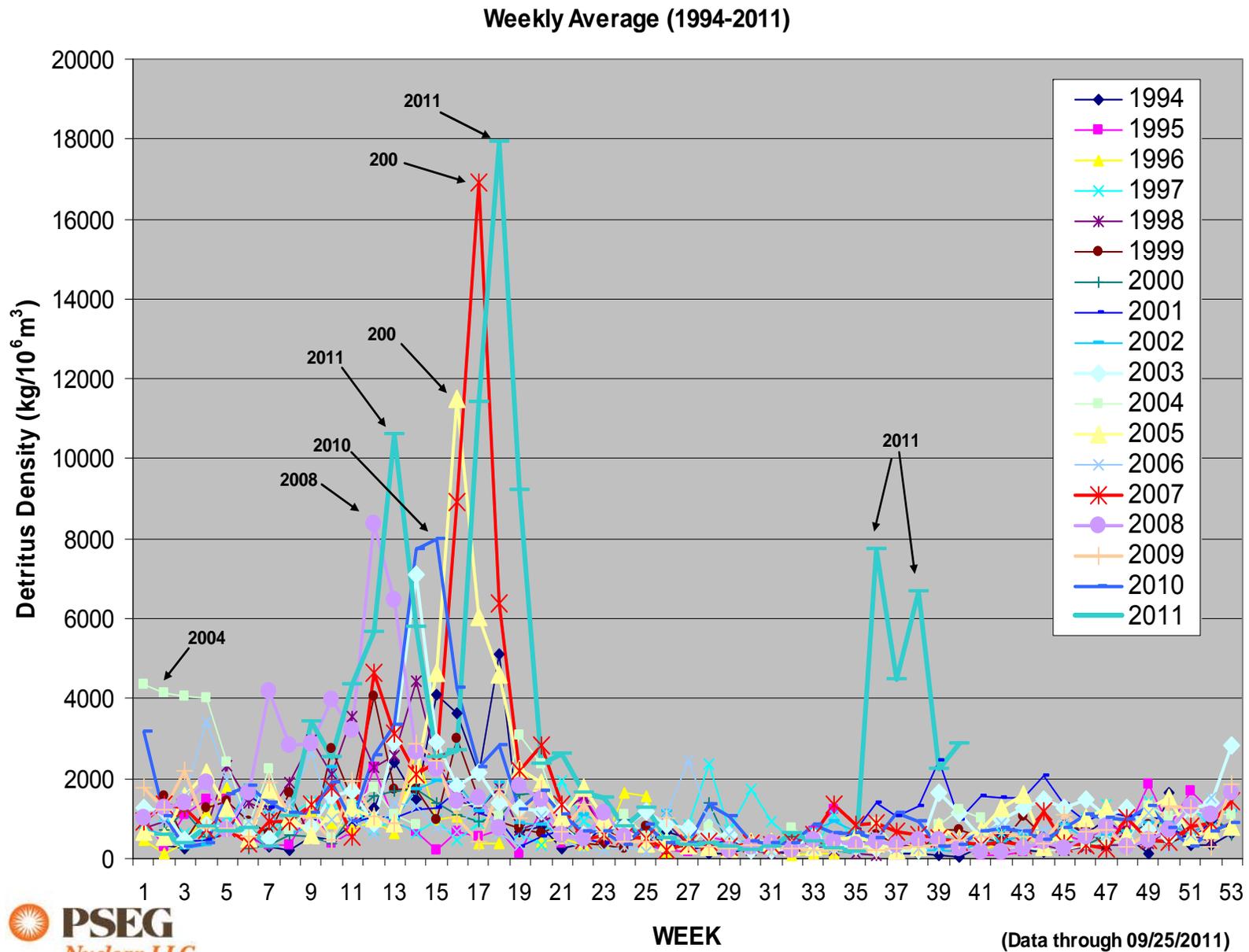
Circulating Water Performance and Improvements

- Key learnings
- Actions taken
- Actions remaining

Turbine Driven Auxiliary Feedwater Performance and Improvements

- Key learnings
- Actions taken
- Actions remaining

Salem Detritus Data



Station Performance Improvement Plan

Zero Tolerance for Equipment Failure

- Operations identification and prioritization
- Work management coordination
- Maintenance ownership of work

Corrective Action

- Product quality
- Average age

Process Rigor

- Pre-outage milestones
- Ownership of plant improvement through crew Management Review Meetings (MRM's)

Salem Key Events for 2011

- USA safety culture assessment
- Operations training – INPO accreditation
- S2R18 refueling outage
- Salem CDBI inspection
- USA SOER 10-2 Management Systems Review
- License renewal
- Dry cask storage campaign
- Implement Nuclear Safety Culture Monitoring Panel
- S1R21 refueling outage



Security

Anndria Gaerity

Security Focus Areas

Safety

- Officers
- Security barriers

Engagement

- Officers
- Stations

Material Condition

- Facilities
- Project

Unresolved Issue (URI)

Security Key Events for 2011

- Force-on-force
- Realigned security organization and added Shift Operations Manager from Hope Creek operations
- Hurricane Irene
- Qualified six additional Assistant Team Leaders
- New class of officers in initial training



Fukushima Response

Paul Davison

PSEG Fukushima Response

Immediately Implemented Corporate Issue Management Procedure
Performed Seismic and Flooding Response Verification

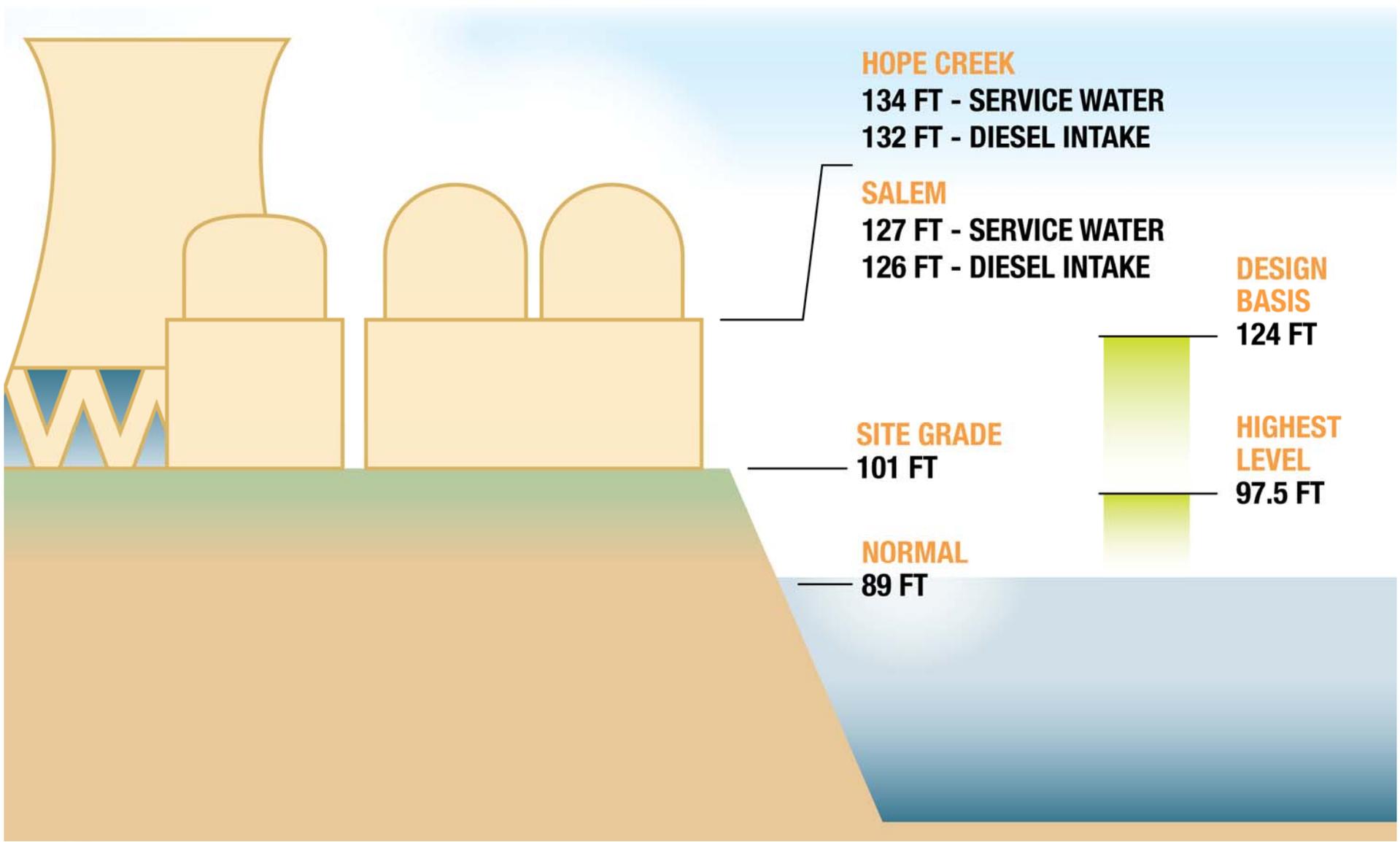
- Physical and procedure validation
- NRC inspection followed

Personnel Dedicated to Implement Long Term Actions

Significant Stakeholder Outreach

- Employee, Board of Directors, retiree and shareholder
- New Jersey and Delaware political leaders
- New Jersey Nuclear Task Force
- Federal and state legislators
- Plant tours

Salem/Hope Creek Flood Design



Fuel Damage Caused by Earthquake and Tsunami

Spent Fuel Pool Loss of Cooling and Makeup

Near Term Actions to Address the Effects of an Extended Loss of all AC Power



New Nuclear

Christine Neely



ESP Project Update - Licensing Process

	2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	2012	2013	2014
Submit Early Site Permit Application								
NRC Acceptance Review								
Public Comment Period - Opportunity to Intervene								
NRC C-4 Public Meeting								
NRC & Applicant Respond to Contentions								
NRC Environmental Scoping Public Meeting								
ALSB Review of Petitions								
NRC Review of Early Site Permit Application								
NRC Issue Requests for Additional Information								
PSEG Respond to RAIs								
NRC Issue Draft EIS								
NRC Issue Final EIS								
NRC Issue Draft Safety Evaluation Report								
ACRS Meeting - Advanced SER								
NRC Issue Final SER								
Mandatory Hearing on Early Site Permit								
NRC Issue Early Site Permit								



Calendar/Events/Questions

Recent Events/Looking Ahead

September

- Economic Development Assoc. of NJ driving tour (9/14)
- NJ Energy Coalition Annual meeting @ EERC (9/15)
- Health & Safety Expo (9/15)
- "A" team EP training drill – all facilities (9/15)
- Nuclear Safety Review Board (week of 9/19)
- Delaware Emergency Management Agency (DEMA) tour (9/19)
- PSEG Vets @ Nuclear kickoff meeting (9/19)
- Salem County Chamber Economic Development Forum (9/23)
- Japanese EP benchmarking (week of 9/26)
- Delaware National Guard driving tour (9/26)
- NJ DEP Councils tour (9/29)

October

- Drop-in with NRC Chairman/Commissioners (10/6)
- New Castle Chamber of Commerce tour (10/11)
- Delaware ASME meeting @ EERC (10/11)
- PEG PAC luncheon (10/14)
- Stand Up for Salem dinner (10/20)
- Salem S1R21Outage begins (10/23)
- Salem County Chamber Best of Salem County event (10/27)



Closing Comments



Back up Slides – Hope Creek

The Target Rock 2-Stage users are:

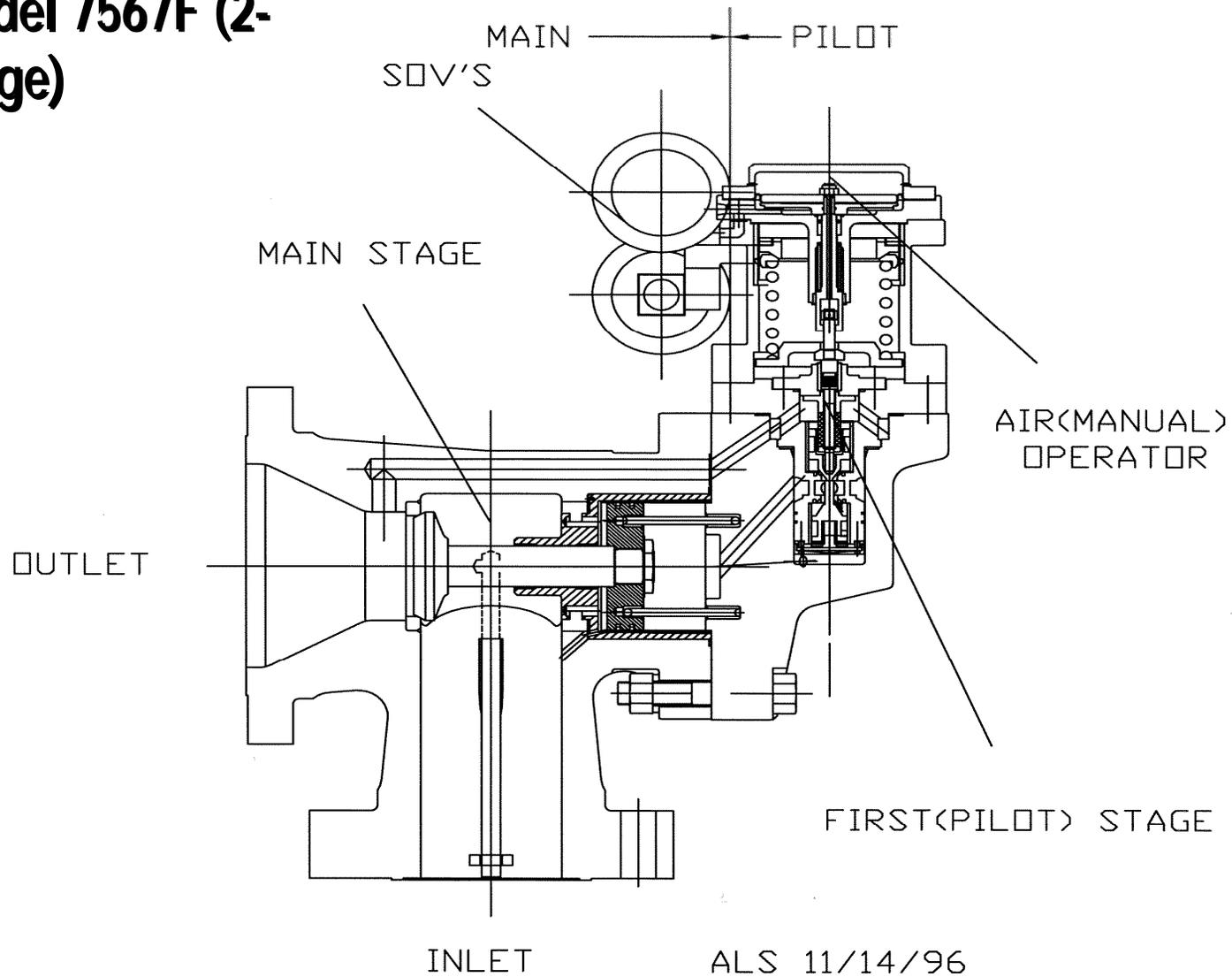
- Hatch, Pilgrim, Cooper, Fitzpatrick, Fermi, Brunswick, Browns Ferry & Hope Creek.
Each station has a history of seat leakage and/or setpoint drift.
- Recently, Hatch, Fitzpatrick, & Pilgrim modified their 2-Stage SRVs to create 3-Stage SRVs.

Internal Drift (+/-3%) OE

- RF8 – 6 of 14 failed setpoint (Platinum Coated discs*)
- RF9 – 2 of 14 failed setpoint (Platinum Coated discs*) (1 yr cycle)
- RF10 – 3 of 14 failed setpoint (Platinum Coated discs*)
- RF11 – 8 of 14 failed setpoint (Platinum Coated discs*)
- RF12 – 5 of 14 failed setpoint (Platinum Coated discs*)
- RF13 – 3 of 14 failed setpoint (Platinum Coated discs*)
- RF14 – No failures of 7 sampled (Solid Stellite 21 Pilot discs)
- RF15 – 6 of 14 failed setpoint (Solid Stellite 21 Pilot discs)
- RF16 – 6 of 14 failed setpoint (Solid Stellite 21 Pilot discs)

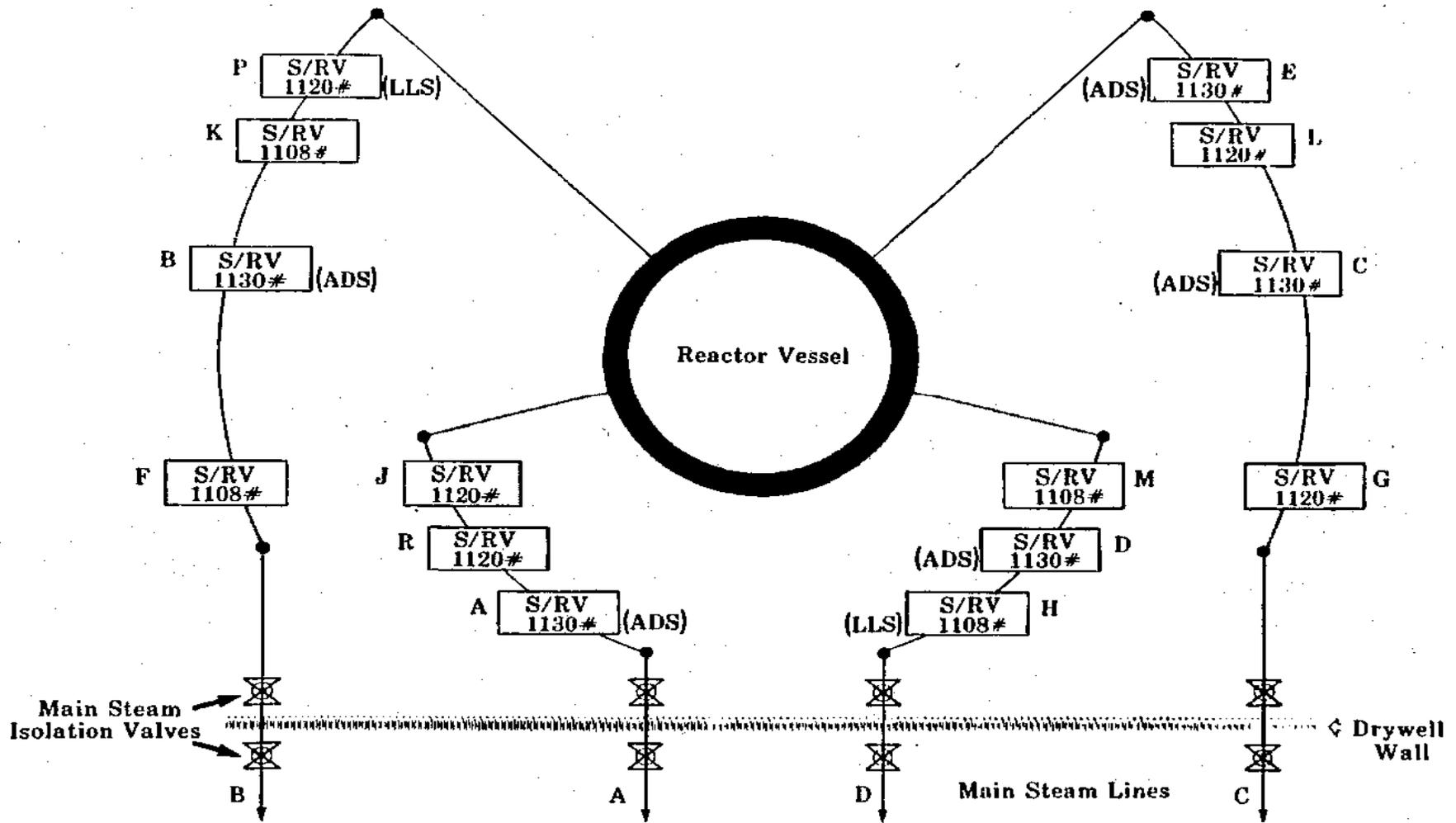
*Platinum Coating applied to the disc using the IBAD process (Ion Beam Assisted Deposition) by Southwest Research at their San Antonio facility in Texas.

Model 7567F (2-Stage)

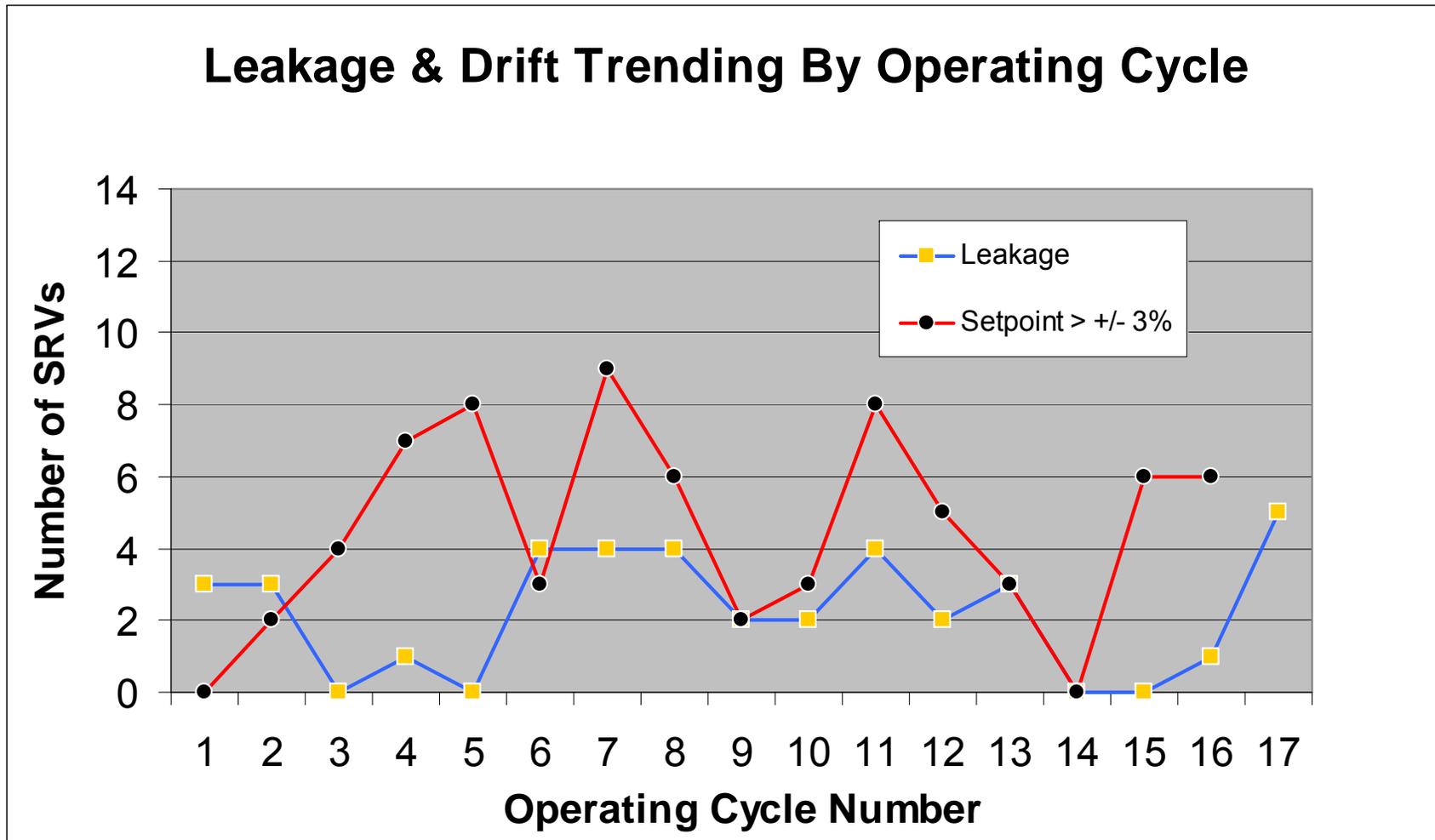


ALS 11/14/96

SRV Plant Locations



Leakage & Drift Trending By Operating Cycle



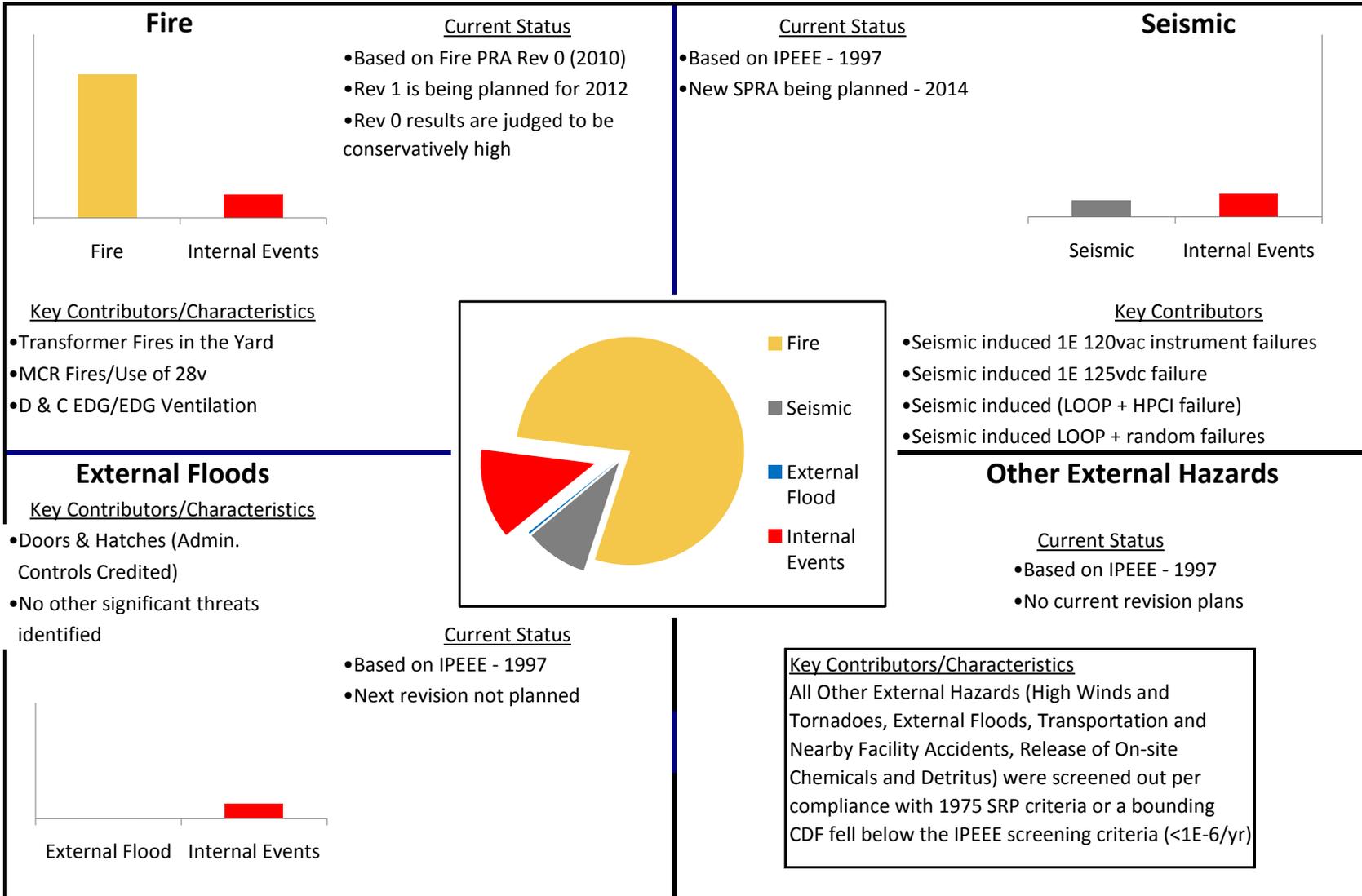
Historical Actions (Setpoint Drift)

- Utilized a Correlation Program to determine there were no common cause/common trends. (Kalsi Engineering)
- Determined that the HC Water Chemistry did not have the potential to promote Corrosion Bonding. (Kalsi Engineering)
- Benchmarked Other 2-stage Users' Operational & Maintenance Practices. (Fermi Station)
- Installed Stellite 21 Pilot Replacement Discs. (RF13)

Operations with a Potential for Draining the Reactor Vessel (OPDRVs)

- NRC Staff believes that an OPDRV is any activity that could result in draining or siphoning the reactor pressure vessel water level below the top of fuel, without crediting mitigating measures to terminate or prevent water inventory losses.
- This definition would encompass many outage-related activities, including Control Rod Drive Mechanism Replacements.
- The BWROG has provided comments to the NRC on their draft Enforcement Discretion on performing OPDRVs with relaxed Secondary Containment requirements.
- The NRC's goal is to publish a RIS with the Enforcement Guidance Memorandum (EGM) by October 1, 2011, to support upcoming refuel outages.
- Long-term solutions being explored include creating a new Technical Specification just for OPDRVs, including a definition.

Hope Creek Risk of External Events PRA



Response to August External Events - VA Earthquake

Plant Response

- Effective EP classification and notification (Common UE)
- Several fluid tank alarms (DWFDS, EDG Fuel Oil, HCU Accumulators)
- Ground motion below trigger for active instrument recording (<0.01g)

Key Learnings

- Seismic scratch plate data anomalies
- Integrate Acts of Nature and Engineering procedures for plant inspections
- External phone line congestion for Emergency Preparedness fax to Local/NRC authorities

Actions Taken

- Recalibrated seismic instrumentation to confirm response

Actions Remaining

- Incorporate lessons learned into AB procedure (10/31/11)
- Implement web based tool for EP notifications (June 2012)

Response to August External Events - Hurricane Irene

Plant Response

- Timely staffing of two full Operating and ERO teams
- Rigorous implementation of Severe Weather Procedure
- Minor water intrusion into known susceptible areas of plant

Key Learnings

- Pre-staging of extra sump pumps in known susceptible areas
- Hydrogen Water Chemistry (HWC) System availability impacted due to licensing commitment on portable Hydrogen Trailer

Actions Taken

- Pre-Stage pumps permanently in susceptible areas

Actions Remaining

- Evaluate design change or commitment options for HWC (12/31/11)
- Revise Severe Weather Procedures with specific actions to address vulnerable areas (10/31/11)

Engineering Focus Area

Technical Rigor

NOS elevation action plan showing positive results – some vendor product review and NOTF documentation performance shortfalls persist.

Actions Taken

- Trained on technical product selection, development and approval
- Implemented observation program and monthly performance data analysis
- Implemented new procedure on review of external technical products

Actions Remaining

- Participate on INPO troubleshooting assist visit at Salem next week
- Complete training to improve troubleshooting performance (09/30/11)
- Complete Effectiveness Review (January 2012)



Back up Slides – Salem

Regulatory Assurance Focus Area

Leveraging corrective action and training to improve plant performance

Actions Taken

- Implemented Performance Improvement Integrated Matrix (PIIM) pilot at Salem Station
- Implemented Safety Culture Panel

Actions Remaining

- Implement PIIM at Salem Station
Owner: J. Kandasamy Due Date: 10/01/11
- Implement PIIM at Hope Creek Station
Owner: M. Gaffney Due Date: ???

Salem – Cross-Cutting Aspect Matrix

AREA	COMPONENTS	ASPECTS	2Q2010	3Q2010	4Q2010	1Q2011	2Q2011	Total	
HUMAN PERFORMANCE (H)	Decision Making (1)	a. Systematic process						0	
		b. Conservative assumptions					PP	1	
		c. Communicating decisions						0	
	Resources (2)	a. Design margin and backlogs					IE		1
		b. Trained and qualified personnel							0
		c. Procedure and documentation adequacy				MS			1
		d. Adequate facilities and equipment							0
	Work Control (3)	a. Planning							0
		b. Coordination					BI	IE	2
	Work Practices (4)	a. Human error prevention techniques							0
		b. Procedure use and adherence	IE				MS		2
		c. Oversight						IE	1
Corrective Action (P)	Corrective Action Program (1)	a. Identification						0	
		b. Trending						0	
		c. Evaluation						0	
		d. Corrective action						0	
		e. Alternative process						0	
	Operating Experience (2)	a. Evaluation and communication				MS		1	
	b. Implemented and institutionalized						0		
Self and Independent Assessments (3)	a. Performance and effectiveness							0	
	b. Safety performance indicators							0	
	c. Results communicated / issues addressed							0	
SCWE (S)	Environment for Raising Concerns	a. Behaviors and interactions						0	
		b. Alternative processes						0	
	Preventing, Detecting & Mitigating Retaliation (2)	a. Training							0
		b. Investigation							0
(Severity Levels 1 through 4)		c. Chilling effect						0	
		a. Wilfulness						0	
		b. Impeding Regulatory Process						0	
		c. Actual Consequences					0		
Findings without cross-cutting issues			1	0	0	1	0	1	
Total number of findings			2	0	1	4	3	3	

LEGEND	Human Performance, PRA	SCWE
	<ul style="list-style-type: none"> No findings 1 finding 2 findings 3 or more findings 	<ul style="list-style-type: none"> No findings NA NA 1 or more findings

Cornerstones	
IE	Initiating Events
MS	Mitigating Systems
BI	Barrier Integrity
EP	Emergency Preparedness
ORS	Occupational Radiation Safety
PP	Physical Protection

Salem – Regulatory Margin Scorecard

Reactor Oversight Process		2Q10	3Q10	4Q10	1Q11	2Q11	Comments	Maximum Score	Actual Score
R.1 Indicators (applies to any R.1 indicator)	green - All R.1 indicators with a margin to white greater than 75%. white - One or two R.1 indicators with a margin to white 75% to 51%. yellow - one or two R.1 indicators with a margin to white 50% to 26%; or three or four indicators with a margin to white 75% to 51%. red - Any R.1 indicator with a margin to white <25%; or three indicators with a margin to white 50% to 26%; or greater than four indicators with a margin to white 75% to 51%.	(Y)	(R)	(R)	(R)	(R)	Unit 1: MSPI Heat Removal (AFW) is RED Unit 1: Unplanned Scrams is RED Unit 2: Unplanned Scrams is Yellow Unit 2: MSPI Cooling Water Systems is White Common: PA Security Equipment is Yellow	10	0
Findings / Quarter	green < 2 findings white 3 findings yellow 4 or 5 findings red >6 findings	2 (G)	0 (G)	1 (G)	5 (Y)	3 (W)	4Q10: 13 AFW Pp inoperability (1MS52 latching) (H.2.c) 1Q11: Missed TS surveillance batt. Capacity test (H.4.b) 1Q11: Tear in the Unit 2 CREACS (H.3.b) 1Q11: Unit 1 Rx Trip (H.2.a) 2Q11: MDO requirements to Security Force (H.1.b) 2Q11: Fuses not installed in 3T60 (H.3.b) 2Q11: Equipment in CFZ without permit (H.4.c)	10	8
Greater than green findings or SL 3 or greater findings in the last four quarters	green - no greater than green or SL3 or greater findings yellow - one greater than green or SL3 or higher findings red - greater than one greater than green or SL3 or higher findings		0 (G)	0 (G)	0 (G)	0 (G)		10	10
Negative Comments/Quarter (written correspondence)	green < 2 comments white 3 or 4 comments yellow 5 or 6 comments red >7 comments	0 (G)	0 (G)	1 (G)	0 (G)	0 (G)		5	5
X-cutting Aspects - Human Perf / last 4 qtrs.	green - no SCCI Letter white - criteria met for cross-cutting theme but no SCCI Letter yellow - 1 SCCI Letter red - greater than one SCCI Letter	1 (G)	0 (G)	1 (G)	2 (G)	2 (G)	2Q10: Unit 2 automatic trip due to the tripping of 21 SGFP (H.4.b) 4Q10: 13 AFW Pp inoperability (1MS52 latching) (H.2.c) 1Q11: Missed TS surveillance batt. Capacity test (H.4.b) 1Q11: Tear in the Unit 2 CREACS (H.3.b) 1Q11: Unit 1 Rx Trip (H.2.a) 2Q11: MDO requirements to Security Force (H.1.b) 2Q11: Fuses not installed in 3T60 (H.3.b) 2Q11: Equipment in CFZ without permit (H.4.c)	10	10
Cross-Cutting Aspects (last 4 quarters) PI&R		0 (G)	0 (G)	0 (G)	1 (G)	0 (G)	1Q11: LTA – Design control (P.2.a)	10	10
X-cutting Aspects - SCWE / last 6 qtrs.	green - no SCCI Letter yellow - criteria met for cross-cutting theme but no SCCI Letter red - SCCI Letter	0 (G)		10	10				

Salem – Regulatory Margin Scorecard (continued)

		2Q10	3Q10	4Q10	1Q11	2Q11	Comments	Maximum Score	Actual Score
LERs (in the past 12 months)	green ≤ 1 LERs white 2 to 4 yellow 5 to 6 red ≥ 7	1 (Y)	3 (R)	2 (R)	1(R)	(4)R	4Q10: U2 trip on GEN protection 4Q10: U1 trip on RCP Bus UV 3Q10: Fuel Movement w/ Chiller O/S 3Q10: "B" Phase MPT Failure 3Q10: Inoperable TDAF Pp during Mode Change 2Q10: 1C vital bus deenergized / EDG auto start 1Q10: U2 trip on CW condenser heat removal 1Q10: U2 trip on 21 SGFP trip 1Q11: SW122 2Q11: 12 SW Stanchion 2Q11: 1R19's auto start of AFWPp 2Q11: Unit 1 manual trip (grassing) 2Q11: 2PR1 2Q11: FHB high flow	10	0
Special Reports (in the past 12 months)	green < 2 white 3 to 5 yellow 6 to 7 red >8	0 (G)		5	5				
Missed Surveillance Tests (in the past 12 months)	green ≤ 1 white 2 to 3 yellow 4 red ≥ 5	1 (G)	1 (W)	0 (W)	1 (W)	1 (W)	3Q10: 1CC109 (20472731) 2Q10: Unit 1 AFW buried pipe IST (20459689) 1Q11: B 28V Dc battery (20495611) 2Q 11: 11FHB exhaust filter unit (20504776)	8	4
NOED Process Starts (in the past 12 months) (when Licensing becomes aware that the NRC has committed resources towards the potential NOED)	green 0 yellow 1 red ≥ 2	0 (Y)	0 (G)	0 (G)	0 (G)	0 (G)		10	10
Unplanned Inspections (in the past 12 months)	green - no additional inspections white - one or two additional resident or specialist inspections yellow - three or four additional resident or specialist inspections, or 1 SIT or 1 AIT. red - greater than 5 additional resident or specialist inspections, or greater than 2 SITs, or greater than 2 AITs, or 1SIT and 1 AIT.	0 (G)	0 (G)	1(G)	0 (Y)	0 (Y)	4Q10: Security PI&R Inspection (Work hours during Outages)	10	8
Communication Issues								Maximum	Actual
Phone Communications / Calendar Quarter									
VP to Region I	green ≥ 3 white 2	3 (G)							
PM to Region I	yellow 1 red 0	>3 (G)		5	5				
From Region I	green 0 white 1 yellow 2 red ≥ 3	2* (W)	0 (G)	0 (G)	0 (G)	0 (G)	2Q10: AFW buried pipe / ISI (comm + / override) 2Q10: U2 containment liner 1Q10: Cleared Procedure Quality SCCI	5	5
								5	5
								Max	Actual
Total Score								123	95

Salem – Regulatory Margin Scorecard (continued)

Color	Max Score	10	8	5
green		10	8	5
white		8	6	4
yellow		5	4	2
red		0	0	0

	Max	Actual
Salem + Corp Total	173	140

Salem Index	77.2
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Salem + Corp Index	80.9
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NOTES:

- Color of cell determined by the period the indicator is measured (e.g. for cross-cutting aspects the number of findings in previous 4 Qtrs determines the color of the cell).
- Numbers in cell reflect quarterly performance (e.g for Human Performance cross-cutting aspects a number 3 in a cell means that there were 3 findings in that quarter that had a cross-cutting aspect in Human Performance)

Note the Salem Regulatory Margin Index for the Second Quarter of 2011 is 77.2 which is Yellow based on the below color ratings:

The combined Salem and Corporate index is 80.9 which is White

Green = Index of 90 through 100

White = Index of 80 through 89.9

Yellow = Index of 70 through 79.9

Red = Index less than 70

Corporate – Regulatory Margin Scorecard

		4th Qtr 2010	1st Qtr 2011	2nd Qtr 2011	3rd Qtr 2011	Comments
Management Visits/Contacts with NRC/year						
to Region I	Green ≥ 2/yr Yellow = 1/yr Red = 0/yr		1	1	1	Last dropin 05/26/2010; next dropin 09/28/2011 1Q11 W. Dean onsite; 2Q11 Rep. Carney public meeting
to Headquarters		1	1	2	1	4Q10 Commissioners dropin; 1Q11 RIC; 2Q11 H. Chernoff, E. Leeds; 3Q11 CTN dropin F. Akstulewicz; next Commissioners dropin 10/06/2011
Meeting Attendance/Quarter						
NEI	Green ≥ 2/Qtr Yellow = 1/Qtr Red < 1/Qtr	>2 (G)	>2 (G)	>2 (G)	>2 (G)	Fatigue Management Task Force, Sump Performance Task Force, Licensing Forum, LATF, EP Working Group, Safety Culture Assessment Task Force; Dry Cask Issue Task Force
RUG/RONSA and Industry Mtgs/Qtr	Green ≥ 3/Qtr White = 2/Qtr Yellow = 1/Qtr Red < 1/Qtr	>3 (G)	>3 (G)	>3 (G)	>3 (G)	RUG; RONSA; PWR and BWR OG; WIN; NAYG 4Q10 PRD JK OGs; 2Q11 PRD LAM OGs; 3Q11 LAM ERM OGs, PRD NCAC Rules Committee
Other						
Number of negative public/media issues/quarter	Green = 0 White = 1 Yellow = 2 Red ≥ 3	(G)	(R)	(R)	(R)	Fukushima; NJ Governor's Task Force; Tritium 3Q11 Salem UE
Number of allegations/Qtr.	Green = 0 White ≥ 1 < 3 Yellow ≥ 3 < 5 Red ≥ 5	1 (W)	2 (W)	0 (G)	0 (G)	4Q2010 RI-2010-A-0091 1Q2011 RI-2010-A-0094, RI-2011-A-0009
Public Attendance at Public Meetings*	Green < 5 White ≥ 5 to ≤ 10 Yellow ≥ 11 to ≤ 20 Red > 20	(G)	(G)	(G)	(G)	Includes: Annual Public meeting, License Renewal and EP meetings. New plant public meetings have received moderate public interest. *This PI does not include public attendance which is supportive of plant operations.
Number of short cycle licensing requests in last 12 months	Green ≤ 1 White 2 & 3 Yellow 4 & 5 Red > 5	0 (W)	0 (G)	0 (G)	0 (G)	
PSEG Sr. Staff time in office / Stability	Senior Level Organizational Turnover, Stability, and KR&T	(G)	(G)	(G)	(G)	Leadership transitions for Braun, Davison, Fricker, Booth seamless and internal. L. Wagner, D. Lewis 3Q11
Number of license submittals deemed unacceptable in the past 12 months	Green 0 White 1 Yellow 2 Red > 2	0 (G)	0 (G)	0 (G)	0 (G)	

Maximum Score	Actual Score
5	5
5	5
5	5
5	5
5	0
5	5
5	5
5	5
5	5
50	45

NOTES:

- Color of cell determined by the period the indicator is measured (e.g. for short cycle licensing requests the number of findings in previous 4 Qtrs
- Numbers in cell reflect quarterly performance (e.g for short cycle licensing requests a number 2 in a cell means that there were 2 short cycle



Back up Slides – Fukushima

NRC Staff Response Fukushima Daiichi 90 Day NTTF

Recommendations for Implementation without unnecessary delay (SECY-11-0124)

- Perform seismic and flood protection walkdowns to identify and address plant-specific vulnerabilities (through corrective action program) and verify the adequacy of monitoring and maintenance for protection features (Pursuant to 10 CFR 50.54). Rec 2.3
- Reevaluate and upgrade as necessary the design-basis seismic and flooding protection of structures, systems, and components for each operating reactor (Pursuant to 10 CFR 50.54). Rec 2.1
- Engage stakeholders in support of rulemaking activities to enhance the capability to maintain safety through a prolonged SBO (Rulemaking). Rec 4.1
- Develop and issue Orders to licensees to provide reasonable protection of the equipment used to satisfy the requirements of B.5.b from the effects of external events, and to establish and maintain sufficient capacity to mitigate multi-unit events (NRC Order). Rec 4.2
- Develop and issue Orders to licensees with BWR Mark I primary containment designs to take action to ensure reliable hardened wetwell vents (NRC Order). Rec 5.1
- Issue an advanced notice of proposed rulemaking to engage stakeholders in rulemaking activities associated with the methodology for integration of onsite emergency response processes, procedures, training and exercises. (Rulemaking). Rec 8
- Perform a staffing study to determine the required staff to fill all necessary positions to respond to a multi-unit event and evaluate what enhancements would be needed to provide a means to power communications equipment necessary for licensee onsite and offsite communications during a prolonged station blackout event (Pursuant to 10 CFR 50.54). Rec 9.3

Industry Actions Since March 11

- Verified measures to manage extreme events
- Increased operator awareness and safety margins for spent fuel cooling and makeup
- Evaluating the extension of coping durations for extended loss of AC power
- Developing detailed timeline of Fukushima event
- Developed governance, goals and principles to guide industry response

Seismic and Flooding Design Bases

- Walk down seismic and flooding protection against current design basis requirements (2.3)
 - Develop procedures & acceptance criteria
 - Obtain NRC concurrence
 - Report results to NRC
- Use Generic Issue 199 as a model for potential updates to plant design bases (2.1)
 - Establish protocol for evaluating new and significant information on seismic and flooding

Near-Term Industry Recommended Actions

Extended Loss of AC Power

- Pursue an Advanced Notice of Proposed Rulemaking (ANPR) to revise §50.63 (4.1)
- Assure sufficient equipment is available to meet §50.54 (hh)(2) requirements for a multi-unit event (4.2)
 - Protect portable equipment from external events using appropriate commercial standards

Near-Term Industry Recommended Actions

Hardened Vents

- Assure adequate accessibility, and the ability to operate, BWR Mk 1 hardened vent valves assuming no AC power (5.1)
- Report results to NRC and implement any warranted improvements

Near-Term Industry Recommended Actions

Spent Fuel Pools

- Assure ability to monitor spent fuel pool level and temperature remotely assuming extended loss of AC power
 - Provide diverse power supply for monitoring
 - Safety-related power supply would not have changed situation at Fukushima

Near-Term Industry Recommended Actions

EOPs, SAMGs and EDMGs (8)

- Assure appropriate training on SAMGs and EDMGs
 - Operators and Emergency Response Personnel
- Standard should be one of familiarity, not proficiency, commensurate with the likelihood of events
- Integration of procedures and guidelines is a longer-term activity

Going Forward Recommendations

- Must maintain current plant focus on safety and reliability
- Post-Fukushima actions must be integrated and prioritized with other important actions
- Given diversity of plant designs, locations and threats, implementation should be flexible, risk-informed and performance-based
- Continue to develop lessons-learned from Fukushima

INPO Issued three Industry Event Reports

11-1 Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami

- Mitigate damage from beyond basis events bounded by large fires and explosions (B.5.b)
- Verify the capability to mitigate station blackout (SBO) conditions required by station design is functional and valid
- Verify the capability to mitigate internal and external flooding events required by station design
- Perform walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events appropriate for the site

11-2 Fukushima Daiichi Nuclear Station Spent Fuel Pool Loss of Cooling and Makeup

- For outage periods, verify the implementation of actions to address recommendations 1 through 4 and 6 through 12 of SOER 09-1, Shutdown Safety, as they relate to the safety functions associated with spent fuel pool (SFP) cooling and inventory makeup
- For on-line periods when the time for the SFP to reach 200 degrees Fahrenheit upon loss of normal cooling is less than 72 hours, establish controls to identify and protect systems and equipment required to maintain the functions of spent fuel pool decay heat removal and inventory control
- Establish, for all plant conditions, the time for the SFP to reach 200 degrees Fahrenheit (bulk temperature) in the event that normal cooling is lost
- Verify the adequacy of station abnormal operating procedures (AOPs) for responding to the loss of SFP cooling and/or inventory
- Revise station emergency operating procedures (EOPs) to include a precautionary statement that spent fuel pool level and temperature should be monitored

Fukushima Daiichi INPO IER Overview

11-4 Near-Term Actions to Address the Effects of an Extended Loss of All AC Power in Response to the Fukushima Daiichi Event

- For all units, develop methods to maintain (or restore) core cooling, containment integrity, and spent fuel pool inventory using existing installed and portable equipment during an extended loss of electrical AC power event that lasts at least 24 hours
- Identify essential instrumentation needed for monitoring core, containment, and spent fuel safety. Develop methods to ensure these functions are maintained throughout an extended loss of AC power event
- Develop methods for providing fuel to power emergency response equipment
- Provide communications equipment suitable for on- and off-site communication needs during an extended loss of AC power event