PSEG NUCLEAR LLC

PSEG Nuclear

Improving the Work Environment at Salem / Hope Creek

NRC Public Meeting December 2, 2004



PSEG NUCLEAR LLC

Chris Bakken

President & CNO PSEG Nuclear, LLC

R. W.



Agenda

Chris Bakken Work Environment Update

- Mike Brothers **Performance Metric Review**
- Mike Gallagher Engineering Support of Operational Decision Making
- Mike Brothers Human Performance Update
- John Carlin Quality Assurance Update

Chris Bakken Next Steps

Corporate Commitment

Leadership commitment and involvement

Participation at site

\$800 million over the next five years

Hope Creek Outage

Improving Our Business – Our Model



Work Environment Update

Three Key Areas

- People
- Processes
- Plant

Performance Metric Review/Human Performance Update

Michael Brothers Vice President – Site Operations

PSEG Nuclear, LLC

Metrics will be published following the first quarter 2005 Employee Survey for:

* KNOWLEDGE OF ALTERNATIVE AVENUES

* EMPLOYEE PERCEPTION OF MANAGEMENT COMMITMENT

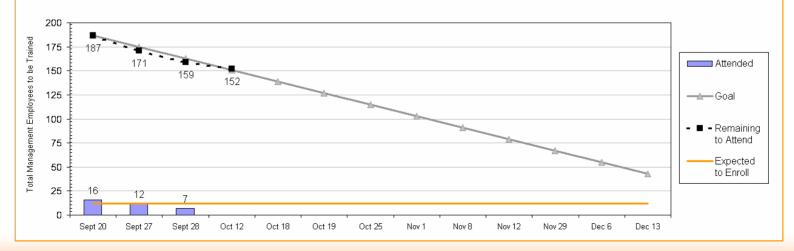
* SUPERVISOR COMMUNICATION EFFECTIVENESS

* TRUST AND RESPECT BETWEEN MANAGEMENT & SITE PERSONNEL





PSEG Nuclear, LLC	September 2004	Status	Definition					
SCWE MANAGEMENT TRAINING ATTENDANCE	Updated: Monthly		Attendance for Safety Conscious Work Environment (SCWE) Training - PSEG Nuclear Management.					
Chart Owner		G						
Nuclear Training Manager		Goal:	43 associates by year end					
History	Intent of Metric							
	Nuclear provides a significant amount of training on a broad range of subjects. This metric measures the training to enhance management's understanding of key Safety Conscious Work Environment (SCWE) policy attributes and our collective roles and responsibilities for proper implementation. This is a full day of training.							
	Analysis and Actions							
New Indicator for 2004	Safety Conscious Work Environ end of January 2005.	nment training for mana	gement is scheduled to be completed by the					



PSEG Nuclear, LLC	September 2004	Status	Definition
EXECUTIVE REVIEW BOARD (ERB) ACTION APPROVALS	Updated: Monthly		Executive Review Board (ERB) reviews proposed personnel actions to ensure no retaliation or chilling effect implications.
Chart Owner		G	
Safety Conscious Work Environment Ma	anager	Goal:	No Adverse Trend
History		Intent of M	etric
	perceived to be taken against site	e personnel for raising n romotions, transfers and	ensure that no adverse action is taken or uclear safety issues. This Board reviews d terminations for PSEG employees and
		Analysis and	Actions
New Indicator for 2004	personnel vendors in July. As e	expected, initial approv	up letter sent to all supplemental (contractor) vals were low, however, the approval rate me more knowledgeable and experienced
20			
15			
المعالم الم معالم المعالم المع معالم المعالم المعا معالم المعالم مع	11 10		■ Total Cases
Reporting / data entry starts in April 5		7	□ Approved Cases
Jan Feb Mar Apr May Jun	Jul Aug Sep	o Oct N	lov Dec

PS	EG N	uclear, LLC	September 2004	Status	Definition
со		YEE CONCERNS PROGRAM (ECP) - RNS CONFIDENTIALITY / ANONYMITY ST	Updated: Monthly	G	The number of Employee Concerns Program (ECP) concerns filed anonymously / confidentially versus total number of concerns per month. Chart does not include NRC 30-day requests.
		Chart Owner			
		Employee Concerns Program Manag	er	Goal:	No Adverse Trend
		History		Intent of N	letric
Number of ECP Concerns	50 40 30	33	This metric shows the total numb an alternate means to have issue		t to our Employee Concerns Manager. This is f line management.
of ECI	20 -	12		Analysis and	Actions
Number	10		the attention of the Employee C	oncerns Program. F	n concerns (non-NRC referred) brought to our were submitted anonymously or with a oncerns indicates no adverse trend.
	10 T	itiality Requested			
Number of ECP Concerns	8 -		7		☑ Monthly Total Confidentiality / Anonymously
Number of E	4 - 2 - 0 -	4 3 3 2 1 1 2 1 1 2 1 1 1	3 1 1 1		Monthly Total Number of Concerns
	U +	Jan Feb Mar Apr May Jun	Jul Aug Sep	Oct N	ov Dec

PSEG Nu	clear, L	LC					Septem	ber 2004	S	tatus		Defin	ition													
TOTAL N	TOTAL NOTIFICATIONS GENERATED						NOTIFICATIONS GENERATED				OTIFICATIONS GENERATED				FICATIONS GENERATED									Total notil basis.	Total notifications generated on a mont basis.	
			Ch	art Own	er		•			G																
		gram Man	ager			(Goal:		No Advers	se Trend																
		Hi	story						In	tent of M	etric															
vi 2500		411		1,6	79		Site personnel w needs attention. personnel. We based on our ow	This metric illus are monitoring to	strates the be sure th	total number e volume of i	of notification ssues is cor	ns written eac	h month by site													
2500 2000 1500 1500 0 0 0		002		20	03		This performan period. Subse		entified a n		ise seen du		g refueling outage													
3,000 2,750 2,500 2,250 2,250 2,250 1,750 1,500 1,250 1,000 750 500	1,837	1,590 Feb	2,190	2,339	1,916	1,540	0 1,509	1,608	1,740	Oct	Nov	Dec	Monthly Total													

PSEG Nuclear, LLC	September 2004	Status	Definition
ONLINE CORRECTIVE MAINTENANCE BACKLOG	Updated: Monthly		The number of open online corrective maintenance work items.
Chart Owner		G	
Salem Maintenance Manager and Hope Creek Ma	aintenance Manager	Goal:	215 by year end
History		Intent of M	etric
	impact on plant operations and ca	an be fixed while the unit is	maintenance. These are items that have an in service. Benchmarking indicates the industry oal is to achieve top performance by the end of
Historical Data Not Available		Analysis and	Actions
	This indicator is on target to me	ret the year-end goal.	
500 450 400 360 250 200 150 100			Good S1 Actual S2 Actual HC Actual COOL

50 0

Jun-28

Jul-05

Jun-21

Jun-14

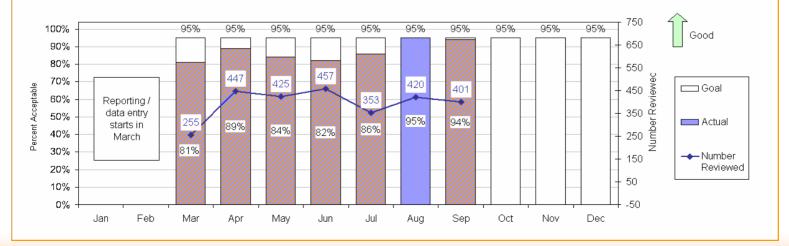
Jul-12 Jul-19 Jul-26 Aug-02 Aug-16

Aug-23 Aug-30 Sep-06 Sep-13 Sep-20 Sep-27 Oct-04 Oct-11 Oct-18 Oct-25 Nov-01 Nov-08 Nov-15 Nov-22 Nov-29 Dec-06 Dec-13 Dec-20 Dec-27

Aug-09

PSEG N	uclear, LL	lear, LLC					S	ep	tem	ber	20	04		S	tati	JS					De	efini	itio	n					
ONLINE	ONLINE ELECTIVE MAINTENANCE BACKLOG			E ELECTIVE MAINTENANCE BACKLOG		ELECTIVE MAINTENANCE BACKLOG		Updated: Monthly					The r items		er of o	ıpen o	nline el	lective	maintenance	work									
					Chai	t Ow	ner										u												
Salem Maintenance Manager and Hope Creek Maint							ainte	ena	nce	Ma	nag	er				Goal	:					1900) by y	ear e	nd				
			Hist	ory														I	Inter	nt o	f Me	etric	2						
This metric measures our total backlog of on-line elective maintenance. These are items an impact on plant operations and can be fixed while the unit is in service. Benchmarking industry median at 1450, with top performance at 1200 for our site. Our goal is to achieve by the end of 2005.											ing inc	dicates the																	
	His	storica	l Data	a Not A	vailab	le												Ana	alysi	is aı	nd A	Acti	ons	;					
											This	indic	ator i	is on t	arget	t to m	eet th	ie yea	ar-enc	l goal									
2,750 2,500 2,250 2,000 1,750 5 1,500 1,000 750 500 250																				- <u>-</u>				Good	d	······································		S1 Actua S2 Actua PZZ HC Actua	al
0	Jun-14 Jun-21 Jun-28	Jul-05	Jul-12	Jul-19	Jul-26	Aug-02	Aug-16	Aug-23	Aug-30	Sep-06	Sep-13	Sep-20	Sep-27	Oct-04	Oct-11	Oct-18	Oct-25	Nov-01	Nov-08	Nov-15	Nov-22	Nov-29	Dec-06	Dec-13	Dec-20	Dec-27	1		

PSEG Nuclear, LLC	September 2004	Status	Definition				
CORRECTIVE ACTION PROBLEM RESOLUTION	Updated: Monthly	R	The percent of corrective action closures determined to be acceptable by Corrective Action Closure Board review, based on the problem resolution criteria. The performance indicator is a				
Chart Owner			monthly value.				
Corrective Action Program Manage	r	Goal:	95%				
History		Intent of M	ətric				
	Site personnel write a notification in our Corrective Action Program (CAP) to identify an issue that needs attention. This metric tracks the quality of the corrective actions that resulted with a goal of greater than or equal to 95% Closure Board acceptance rate, meaning the correct actions resulted from the notification. Items that are not accepted by the Board are not closed until the issue is reworked and the Board approves.						
New Indicator for 2004	Analysis and Actions						
	Improvement has been achieve This indicator is trending to ach		npleteness of corrective action closures. nce goal.				



PSEG N	Nuclear,	LLC						Septem	ber 2004	Sta	itus	_	efinition
NUCLE	AR CO	NDITION	REPOR		/ITIES (OVERD	UE	Updated	d: Monthly		3	Report activit monthly basis	f Nuclear Condition ies overdue on a s, measured as an actual finish date
				Chart (Owner					occurring afte	er the due date.		
Corrective Action Program Manager										Go	al:		5%
History										Intent	of Meti	ric	
								that needs atte		c tracks the f	timeliness c	of our review a	AP) to identify an issue nd corrective actions, by 5%.
		٩	New Indicator	for 2004						Analysis	and Ac	tions	
								expected beca	ause we chose w begin focusin	to concentra	ate on CAP	quality first, v	mproved. This was /hich has improved, thodical process
25% -	1												
00%									Į	Good			
20% - enpe 15% -									¥				Monthly Overdue
an 15% - O Bin 10% - Location Location					8%	9%		11%	9%				Goal
୍ଥ 5% -		<u> </u>		<u></u>		<u> </u>	6%			<u> </u>		A	
0% -	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

PSEG Nuc	lear, LLC		September 2004	Status	Definition		
	CLEAR CONDITION REPORT		Updated: Monthly	R	The number of due date extensions approved for open Nuclear Condition Report evaluations.		
	Chart Owner						
	Corrective Action Program Man		Goal:	No Adverse Trend			
	History			Intent of Me	ətric		
	New Indicator for 2004	Site personnel write a notification in our Corrective Action Program (CAP) to identify an issue that needs attention. This metric looks at the timeliness of our review and corrective actions by tracking the number that have a due date extension, which is allowed by our process. By tracking those that are extended, we expect to see an improvement trend in overall timeliness. Analysis and Actions The trend for this indicator has not improved. This was expected because we chose to concentrate on CAP quality first, which has improved, and we will now begin focusing on CAP timeliness appart of a methodical process improvement strategy.					
100 90 80 70 50 40 40 40 40 30	85 Reporting / data entry starts in May	71	6769		Monthly Total		

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Feb

Jan

PSEG N	uclear, LLC	September 2	2004	Status	De	finition					
SALEM	UNIT 1 REPEAT MAINTENANCE ISSUES	Updated: Month	ly			epeat maintenance issues ty related equipment.					
	Chart Owner			G							
	Corrective Action Program Manager			No A	No Adverse Trend						
	History	Intent of Metric									
			ems that h	iave been fixed and nee	d to be reworked w	irst time on safety-related ithin twelve months. This am improves.					
	New Indicator for 2004	Analysis and Actions									
		Review of the data for the past quarter does not indicate an adverse trend. Analysis of the specific component challenges reported as repeat maintenance indicates that valve issues are the largest contributor. A review will be performed and corrective actions will be issued if required.									
30 -]					
25 -		25				_					
sans s 20 -											
<u>s</u> 20 -		16				Monthly					
- 05 Repeat Maintenance Issues - 15 - 10 -	Reporting / data entry starts in July		12			Actual					
5 - 0 -						-					
U -	Jan Feb Mar Apr May Jun	Jul Aug	Set	D Oct N	lov Dec	٦					

PSEG Nuclear, LLC	S	Septem	ber 2	004	Stat	us	Definition
SALEM UNIT 2 REPEAT MAINTENANCE ISSU	T 2 REPEAT MAINTENANCE ISSUES Updated: Monthly						The number of repeat maintenance issues identified on safety related equipment.
Chart Owner					G		
Corrective Action Program Man	nager				Goal	:	No Adverse Trend
History					Intent	of Me	tric
	equi	ipment. We	track ite	ms that h	ave been fixed	l and nee	ixed correctly the first time on safety-related d to be reworked within twelve months. This active action program improves
New Indicator for 2004					Analysis	and A	ctions
	spe the	ecific comp	onent cha	allenges	reported as r	epeat ma	te an adverse trend. Analysis of the intenance indicates that valve issues are d corrective actions will be issued if
30 -							
25 -							
		21		20			
			15				Monthly
Reporting / data entry starts in July							Actual

Oct

Nov

Dec

Sep

5

o +

Jan

Feb

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Aug

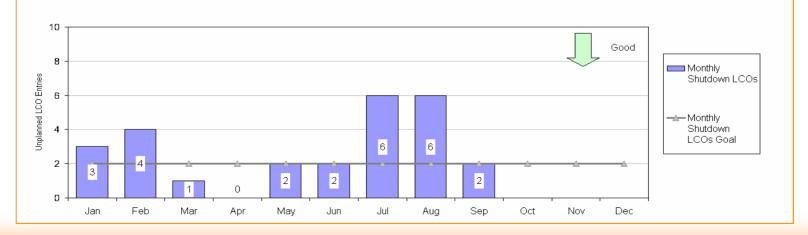
PSEG Nucl	ear, LLC			Septemb	er 2004	Status		Definition				
HOPE CRE	CREEK REPEAT MAINTENANCE ISSUES				EEK REPEAT MAINTENANCE ISSUES							nber of repeat maintenance issues d on safety related equipment.
		Chart Owne)r			G						
	Corrective	Action Prog	yram Manager			No Adverse Trend						
	History					Intent of	f Metric					
				equipment. We tr	ack items that h	ave been fixed an	d need to be rev	ectly the first time on safety-related worked within twelve months. This on program improves				
	New Indicator for	2004				Analysis ar	nd Actions	;				
					ent challenges			verse trend. Analysis of the e indicates no specific				
30 25 20 46beat Maintenance Issues 15 40 40 40 40 40 40 40 40 40 40 40 40 40	Reporting /	data entry starts ir	n July	15	13 11			Monthly Actual				
o 🗕	Jan Feb Mar	Apr	May Jun	Jul	Aug Sep	o Oct	Nov	Dec				

PSE	G Nucle	ar, LLC				Sept	ember 20	004	Status		Definition		
SAL	EM UNI	T 1 OPERA	TIONA	L CHAL	LENGES		Up	dated: Monthly	,		warran		operational issues that ion of the Operational se Team.
				Chart O	wner					G			
			Sa	lem Plan	t Manager			Goal: No A					
			Histor	y						Intent o	of Metric		
							We established a procedure to allow our operating crews to request additional assistance to address emergent issues. These are called "Operational Challenges". This metric measures the number of time each month our operators engage this assistance. Our goal is to minimize the challenges to our operatir crews. By tracking and reviewing the challenges, we can investigate common causes and potential trend						
										Analysis a	nd Actic	ons	
			/Indicator fo	00 1			performar common t conditioni	ice of station b o both Salem	oattery testi Units 1 and both cases	ng within the red I 2 and consiste the events wer	quired frequ d of reconfi	ency. The se guration of th	ed a challenge to cond challenge was e control room air ate corrective actions
1													1
1	9												
	8 -												
hallenges	5												Monthly Total
peratior	4	eporting / data entr starts in April	/										
	2												
:	2			0	0	0	0	1	1				

PSEC	G Nucle	ar, LLC					Septe	ember 20	04	Status		Defin	ition
SALE		۲ 2 OPERAT	IONAL	CHALL	ENGES		Upd	ated: Monthly		warrant implemental Challenges Respons		plementation of	
				Chart Ow	ner					G			
			Sale	em Plant	Manager					Goal:		No Adver	se Trend
			History							Intent of	f Metric		
							emergent is each month	sues. These a our operators	re called "C engage this	perational Chall assistance. Ou	enges". This m r goal is to min	etric measure imize the chall	tance to address s the number of times enges to our operatin es and potential trend
										Analysis ar	nd Actions	;	
							the cleanu was comm conditionin	o of chemical r ion to both Sal	esidue. Th em Units 1 Ill cases, th	e leak was elim and 2 and cons e events were r	inated and res isted of recon	sidue remove figuration of th	th challenge involved d. The final challeng le control room air prrective actions wer
10)												1
g													-
8	,												
7													-
allenge:	3												
Operational Challenges P cn cn													■ Monthly Total
3	8	Reporting / data entry starts in April	/										
2 1				1	1	0	2	0	2				
C	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	4

PSEC	G Nuclea	ar, LLC					September 2004	Status	Def	inition
HOPE	ECREE		FIONAL	CHALLI	ENGES		Updated: Monthly	R	The number of plant of warrant implementation Challenges Response	
				Chart O	wner					
			Норе	Creek Pla	ant Manage	ər		No Adv	No Adverse Trend	
			History	,				Intent of	Metric	
							We established a procedure to a emergent issues. These are cal each month our operators engage crews. By tracking and reviewin	led "Operational Challe e this assistance. Ou	enges". This metric meas r goal is to minimize the c	ures the number of times hallenges to our operating
								Analysis ar	nd Actions	
		Nev	v Indicator fo	r 2004			Six operational challenges were deficiencies that were corrected transmission line, and the remain been established, the events were stablished the events w	d by replacement or aining challenge was	repair. One challenge in due to diesel maintenan	volved instability of the ce. Although a trend has
10										-
9 8 7										
9 8 7										Monthly Total
Coperational Challenges Coperational Challenges Copera		?eporting / data er starts in April	ntry							
Operational Challenges b c c c c c c c c			ntry	0	0	0	1	3		

PSEG Nuclear, LLC	September 2004	Status	Definition			
SALEM UNIT 1 UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	R	The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.			
Chart Owner						
Salem System Engineering Manage	r	Goal:	2 per Month			
History		Intent of M	etric			
	Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a shutdown LCO, meaning the equipment must be fixed in a defined period of time, or unit shutdown is required. This metric measures the unplanned entries made at Salem Unit 1, compared to the expected number at top performing nuclear units (less than or equal to 2/month).					
Historical Data Not Available	Analysis and Actions					
	five caused by issues associate	ed with the containment sed-loop cooling projec	re fourteen shutdown limiting conditions of operation, including: I with the containment fan cooling units (CFCUs) (factors that will d-loop cooling project); two associated with batteries; and seven ce.			



PSEG Nuclear, LLC	September 2004	Status	Definition			
SALEM UNIT 1 UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	G	The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.			
Chart Owner						
Salem System Engineering Manage	r	Goal:	6 per Month			
History		Intent of	Metric			
Historical Data Not Available	Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a non-shutdown LCO, meaning the equipment must be fixed in a defined period of time, or you are required to take compensatory measures. This metric measures the unplanned entries made at Salem Unit 1, compare to the expected number at top performing nuclear units (less than or equal to 6/month). Analysis and Actions The unfavorable performance in May was primarily due to monitoring and instrumentation issues.					
	A multi-year capital improvemer instrumentation issues were add	dressed during the re	good Good Cost Monthly Non - Shutdown LCOs Monthly Non - Shutdown			

5

Sep

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Jun

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2 -

0 -

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Jan

5

Mar

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Apr

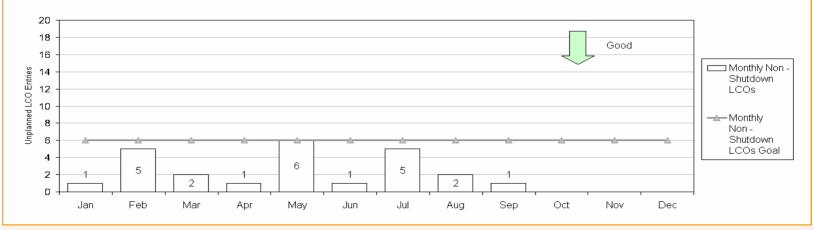
May

3

Feb

PSEG	S Nuclear, LLC	September 2004	Status	Definition				
	EM UNIT 2 UNPLANNED SHUTDOWN FING CONDITION OF OPERATION (LCO) RIES	Updated: Monthly	G	The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.				
	Chart Owner							
	Salem System Engineering Manage	ər	Goal:	2 per Month				
	History		Intent of M	etric				
		(NRC) called Technical Specifica meaning the equipment must be f	tions. Certain rules req ixed in a defined period Intries made at Salem U	ules from the Nuclear Regulatory Commission uire operators to enter a shutdown LCO, of time, or unit shutdown is required. This Jnit 2, compared to the expected number at top				
	Historical Data Not Available	Analysis and Actions						
01 Anthread LCO Entries A C C		2 1 1 Jul Aug Sep	Go Go Oct Nov	od Monthly Shutdown LCOs Monthly Shutdown LCOs Goal				

PSEG Nuclear, LLC	September 2004	Status	Definition			
SALEM UNIT 2 UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	G	The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.			
Chart Owner		U				
Salem System Engineering Manage	r	Goal:	6 per Month			
History		Intent of Me	etric			
	Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a non-shutdown LCO meaning the equipment must be fixed in a defined period of time, or you are required to take compensatory measures. This metric measures the unplanned entries made at Salem Unit 2, compared to the expected number at top performing nuclear units (less than or equal to 6/month).					
Historical Data Not Available	Analysis and Actions					
	Unplanned Non-shutdown Entries are meeting the goal.					



PSEG Nuclear, LLC	September 2004	Status	Definition
HOPE CREEK UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	R	The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.
Chart Owner			
Hope Creek System Engineering Mana	ıger	Goal:	2 per Month
History		Intent of I	Metric
	(NRC) called Technical Specificat the equipment must be fixed in a	tions. Certain rules rec defined period of time, i made at Hope Creek, c	ules from the Nuclear Regulatory Commission uire operators to enter a shutdown LCO, meaning or unit shutdown is required. This metric ompared to the expected number at top performing
		Analysis and	Actions
			imary cause of this metric being above goal. A water system is being developed.
			Good Monthly Shutdown LCOs
	3 4 2	<u> </u>	Monthly Shutdown LCOs Goal
Jan Feb Mar Apr May Jun	Jul Aug Se	p Oct I	Nov Dec

PSEG Nuclear, LLC	September 2004	Status	Definition					
HOPE CREEK UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	G	The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.					
Chart Owner								
Hope Creek System Engineering Mana	ager Goal: 6 per Month							
History		Intent of M	letric					
	(NRC) called Technical Specificat meaning the equipment must be f	tions. Certain rules requ ixed in a defined period o s the unplanned entries r	les from the Nuclear Regulatory Commission ire operators to enter a non-shutdown LCO, of time, or you are required to take compensatory nade at Hope Creek, compared to the expected to 6/month).					
Historical Data Not Available	Analysis and Actions							
20 18 16 14 12 12 10 8 6 4 2 6 5 3 4 2 4 2 4 4 4 4 4 5 3 4 4 4 4 4 4 4 4 4 4		2	Nov Dec					
Jan Feb Mar Apr May Jun	Jul Aug S	Sep Oct	Nov Dec					

PSE	EG	Nucle	ar, LLC				Septem	ber 2004	Status		Defi	nition			
		M UNI ⁻ AILAB		RGENCY DI	ESEL GEN	IERATOR	Update	Updated: Monthly		the E	sum of the planned Emergency Diesel G lable.	and unplanned hours that enerators were not			
				(Chart Owne	r									
				Salem Syste	em Enginee	ring Manager			per month lling average)						
				History					Intent o						
	50 25						removed from se service, compare	rvice for maintena ed against the indu	series of redundant saf ance. This metric monit ustry median. The total i Salem Unit 1. This is a lo	ors the amou represents th	unt of time the Emer ne sum of the unava				
v ailab	76		79				Analysis and Actions								
Avg Mt	50 - 26 - 0 -		2002		26		service for at lea	ast one planned i	nance on a 36 month n maintenance window d ned, thus demonstrating	luring an 18	month operating c	/cle. All maintenance			
σ	178 150 128	0									Good	Monthly Actual			
Unavailable Hours		5										- ■ - 36 Month Rolling Actual			
	50 25			-			· · · · · · · ·		37	<u>^</u>	▲	→ 36 Month Industry Median Goal			
	·	Ja	n Fel	b Mar	Apr	May Ju	n Jul	Aug	Sep Oct	' No	v Dec				

PSE	G Nuclear,	LLC					Septer	nber 200	4	Status	;	De	efinition
	EM UNIT 2 VAILABILI		ENCY D	IESEL GI	ENERATO	R	Updated: Monthly			G		The sum of the planned and unplanned hours that the Emergency Diesel Generators were not available.	
				Chart Owr	ner					u			
		S	alem Syst	em Engine	eering Mana	ager							urs per month th rolling average)
			History							Intent	of Met	ric	
Avg Mth Unavailable Hour: 72, navailable Hour: 72, 22, 22, 22, 22, 22, 22, 22, 22, 22,							removed from s service, compar	ervice for main ed against the	itenance. industry r	This metric mor nedian. The tota	itors the a I represer	amount of time the E	. This allows equipment to be Emergency Diesels are out of navailable hours of the three nance.
un 15										Analysis a	and Ac	tions	
41 50 W DA 25 0		29 2002	1		24		Diesel unavaila	bility hours ar	e currenti	y meeting the g	oal.		
17 15 12 10 10 10 10 10 10 10 10 10 10 10 10 10	50 55 55 55 50	<u>R</u> Feb	<u>M</u> Mar	Apr	May	á -			21 • • •			Good ov Dec	Monthly Actual

PSE	G Nu	clear, L	LC					Septembe	r 2004	St	nition			
		EEK EI ABILIT			SEL GEN	IERATOR		Updated: M		R			and unplanned hours that enerators were not	
				Cł	nart Owne	r								
			Норе	Creek Syst	tem Engir	neering Mar	nager						36 hours (36 month rol	
				History						lr	ntent of M	etric		
Avg Mth Unavailable Hours 2 2 2 001 Augurs 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		12	16				rei se	moved from servic	e for mainter gainst the inc	iance. This me lustry median.	tric monitors th The total repres	e amount of ti sents the sum	me the Emerg of the unavail	: allows equipment to be ency Diesels are out of able hours of the four
aliavai 19	_									Ana	ysis and /	Actions		
₩ 50 ₹ 25 0		20	52		200		— pe	performed this year, with the exception of thirty hours, has been planned maintenance designed system reliability.						02. All maintenance designed to improve
	175													1
	150											Good	1	Monthly Actual
	125													— 20 Marsh
Unavailable Hours	100 75 50 25 0	• • • •	· · • • · ·	· · · • • · · ·	▲ 	· · · • · · · ·		· · · · • · · ·		83		<u></u>	_	- ■ - 36 Month Rolling Actual
	0	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

PSEG N	Nuclear, LLC				September 2004		4	Status	D	Definition	
	I UNIT 1 AUXIL AILABILITY	IARY FEE	DWATER S	YSTEM	Up	dated: Monthly		B The sum of the planned and unplanned hour: the Auxiliary Feedwater Systems were not available.			
			Chart Owner								
	:	Salem Syst	em Engineer	ing Manager			Goal: 11 hours per month (36 month rolling average)				
		History						Intent of N	letric		
126			109		removed fro Feedwater S	m service for main System is out of sei	tenance. This rvice compare	metric monitors d against the indu	the amount of time the \$	represents the sum of the	
- 75							Ar	nalysis and	Actions		
Avg Mth Unavailable Hours 20 - 00 0 - 00	8		2003		planned ma Additional r	intenance on the	steam admis: iis system is p	sion valve on the	turbine driven auxiliar	2003 and emergent and y feedwater pump in 2004. performed to ensure that	
60		• •	• • • • •				- - ■ 45		Good	Monthly Actual Actual Actual Actual Actual Actual Actual Actual Goal	
0 +	Jan Feb	Mar	Apr	May Jun	Jul	Aug	Sep	Oct	Nov Dec		

PSEG Nuclear, LLC								Septem	ber 2004	5	Status		Definition		
SALEM UNIT 2 AUXILIARY FEEDWATER SYSTEM UNAVAILABILITY								Updated	l: Monthly		B		The sum of the planned and unplanned hours that the Auxiliary Feedwater Systems were not available.		
	Chart Owner														
	Salem System Engineering Manager						iger				Goal: 11 hours per month (36 month rolling average)				
	History									, I	ntent of I	<i>l</i> letric			
2n	125						rer Fe	moved from ser edwater Syster	vice for maintena	nce. This m compared a	etric monitors against the ind	the amount of ustry median.	time the Saler The total repre	sents the sum of the	
nav aila	75									Ana	lysis and	Actions			
∕tth Ui	50 -						Di	uring the currer	it year, planned r	maintenanc	e has been p	erformed to m	aintain systen	n reliability.	
Avg	0	13			20	03									
	⁶⁰ T]	
	50 -											Good		Monthly Actual	
Jouro	s 40 +													- ■ - 36 Month	
I Inoviciable Hours	anlable 30 -													Rolling Actual	
-	5 20 -						_								
	10 -			0					<u> </u>	11	<u></u>	<u>^</u>	<u>A</u>	Industry Median Goal	
	0 +				т т				1 1				1	-	

	Nuclear,	LLC					September 2004 Statu					
HOPE CREEK RESIDUAL HEAT REMOVAL SYSTEM UNAVAILABILITY							Updated: Monthly		The sum of the planned and unplanned hours t the Residual Heat Removal Systems were not available.			
			(Chart Ow	ner			G				
		Норе	Creek Sy	/stem En	gineering Ma	nager		12 hours per month (36 month rolling average)				
			History				Intent of Metric					
125 - 3100 - 100 - 75 - 75 - 50 - 25 -							to be removed from service for r Residual Heat Removal System	maintenance. This met s are out of service con	safety systems and equipment. This allows equipm ic monitors the amount of time the Hope Creek apared against the industry median. The total trains at Hope Creek. This is a long-term trend of or			
5 - 75 -								Analysis a	nd Actions			
50 -							During the current year, planne	ed maintenance has be	een performed on this system to meet goal.			
25 - 0 -		17			2							
60 50									Good			
50 -									Actual			
50						u	<u>û</u> <u>û</u>	11	Actual Actual 36 Month Rolling			

PSEG N	luclear, LLC	September 2004	Status	Definition			
	UNIT 1 CHEMICAL VOLUME CONTROL AND Y INJECTION SYSTEM UNAVAILABILITY	Updated: Monthly	R	The sum of the planned and unplanned hours that the Chemical Volume Control and Safety Injection Systems were not available.			
	Chart Owner						
	Salem System Engineering Manager		Goal: 14 hours per month (36 month rolling average)				
	History	Intent of Metric					
50 200 40 a)	30	removed from service for maintenanc	 This metric monitors the are out of service compare 	rstems and equipment. This allows equipment to be e amount of time the Salem Unit 1 Chemical Volume ad against the industry median. The total represents rend of our performance.			
del 30	30		Analysis and	Actions			
Understand	2002 2003			nce issues. During the current year, all le, was scheduled to improve system reliability.			
175 - 150 - 125 -				Good Monthly Actual			
- 100 - Unav ailable Hours - 52 -				- ■ - 36 Month Rolling			
%e 75 - ⊡				Actual			
50 - 25 -			- 27	36 Month Industry Median Goal			

Jun

Jul

May

Apr

Mar

Jan

Feb

0 +

Aug

Sep

Oct

Nov

Dec

	luclear, Ll	LC				September 2004	Status	Defin	ition			
SALEM UNIT 2 CHEMICAL VOLUME CONTROL AND SAFETY INJECTION SYSTEM UNAVAILABILITY						Updated: Monthly	t: Monthly R The sum of the planned and unp the Chemical Volume Control an Systems were not available.					
			c	Chart Owner								
Salem System Engineering Manager History							Goal: 14 hours per month (36 month rolling average)					
						Intent of Metric						
50		35				Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to b removed from service for maintenance. This metric monitors the amount of time the Chemical Volume Control and Safety Injection Systems are out of service compared against the industry median. The total represents the sum o the four trains on Salem Unit 2. This is a long-term trend of our performance.						
da ailas 30				25			Analysis and	Actions				
40 Hinavailable Hours An Unavailable Hours An Ho						This metric is tracking above goal maintenance was scheduled to imp		e to historical performance issues. During the current year, all ve system reliability.				
0												
0		2002	1	2003								
		2002		2003				Good	Monthly Actual			
175 - 150 - 125 -		2002		2003				Good	,			
175 - 150 - 125 -		2002		2003				Good	Actual			
175 - 150 - 125 -		2002		2003				Good	Actual			
175 - 150 - 125 - ≌		2002		2003				Good	Actual - ■ - 36 Month Rolling			
175 - 150 - 125 - 125 - 100 - 100 - 75 - 50 -		2002		2003				Good	Actual - ■ - 36 Month Rolling Actual 			
175 - 150 - 125 - 125 - 100 - 100 - 75 - 75 -				2003			29	Good	Actual - - - - - - - - - - - - -			

PSEG	Nuclear, LLC				Se	ptember 200)4	Status		Def	inition
HOPE CREEK HIGH PRESSURE INJECTION AND REACTOR CORE ISOLATION COOLING SYSTEM UNAVAILABILITY					Updated: Monthly				the Hi	The sum of the planned and unplanned hours that the High Pressure Injection and Reactor Core Isolation Cooling Systems were not available.	
			Chart Own	ner				G			
	ŀ	lope Creek \$	e r Goal:			Goal:		18 hours per month (36 month rolling average)			
			Intent of Metric								
50 - SJ 40 - eld					removed fr Reactor Co	om service for maint pre Isolation Cooling	enance. ⁻ Systems :	This metric monitors the	amount of ared agains	f time the High Pr st the industry me	allows equipment to be essure Injection and edian. The total represents
a ailat ailat					Analysis and Actions						
- 40 - - 00 Mth Unavallable Hours - 00 - 0 -	2002		2		The system unavailability was impacted by planned maintenance and an original design discrepancy which was discovered and corrected.						
175 -											
150 -						<u> </u>					Monthly
125 -											Actual
- 001 Hours - 75 -											- ■ - 36 Month Rolling Actual
- 75 Juax											
50 - 25 -	<u> </u>	<u>-</u>	<u> </u>	÷		····	17 			A	36 Month Industry Median Goal
0 1	Jan Feb	Mar	Apr	May Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Engineering Support of Operational Decision Making

Michael Gallagher Vice President – Engineering & Technical Support Improvement initiatives were developed during the reorganization of Fall 2003

Engineering was focused on each Station to improve Operational Focus

The number of System Engineers was increased and the function was strengthened

Design Engineering initiated quality programs and developed special training

Technical Rigor Training Conducted

Operational Decision Making Improvements

The recent Hope Creek Pipe Failure has led to a review of the operational decision making process

Our process is being improved based on industry best practice

Interim actions are in place until the process is finalized

A review of operability determinations at Salem has been completed. Hope Creek reviews will be completed before startup

Other recent key decisions will be reviewed utilizing the operational decision making process

PSEG NUCLEAR LLC

Human Performance

Michael Brothers Vice President – Site Operations

Human Performance

Human performance is being addressed via the successful implementation of our five Business Focus Areas

Specific accountability is established in our business plan, coaching log book and key Focus Area metrics

Procedure Compliance

Procedure compliance expectations have been reiterated by the Plant Managers

The number of technical non-compliance notifications remains low and the trend is improving

The number of administrative non-compliance notifications has dropped since the beginning of the year

PSEG NUCLEAR LLC

The Role Of Quality Assessment

John Carlin Vice President – Nuclear Assessment

The Role of Quality Assessment

Required by Regulation

- Maintain independence
- Assess QA Program compliance

Organizational Conscience

- Maintain independent Quality Organization
- Go beyond minimum requirements
- Identify and investigate potential trends
- Assess overall performance

QA's Role in the Five Business Plan Key Areas

Assess effectiveness of key improvement initiatives

Validate accuracy of key performance metrics

Assess completeness of Business Plan Action Item Closures

QA Improvement Initiatives

Completed

- Established integrated site quarterly exit meetings
- Increased the focus on performance
- Delivered more concise results
- Established an escalation process for QA issues

Planned

- Increased Power Board of Director oversight of QA
- Survey QA site stakeholders
- Train site personnel on QA purpose and fundamentals

Chris Bakken

President & CNO – PSEG Nuclear

