

# Seabrook Station Millennium Project

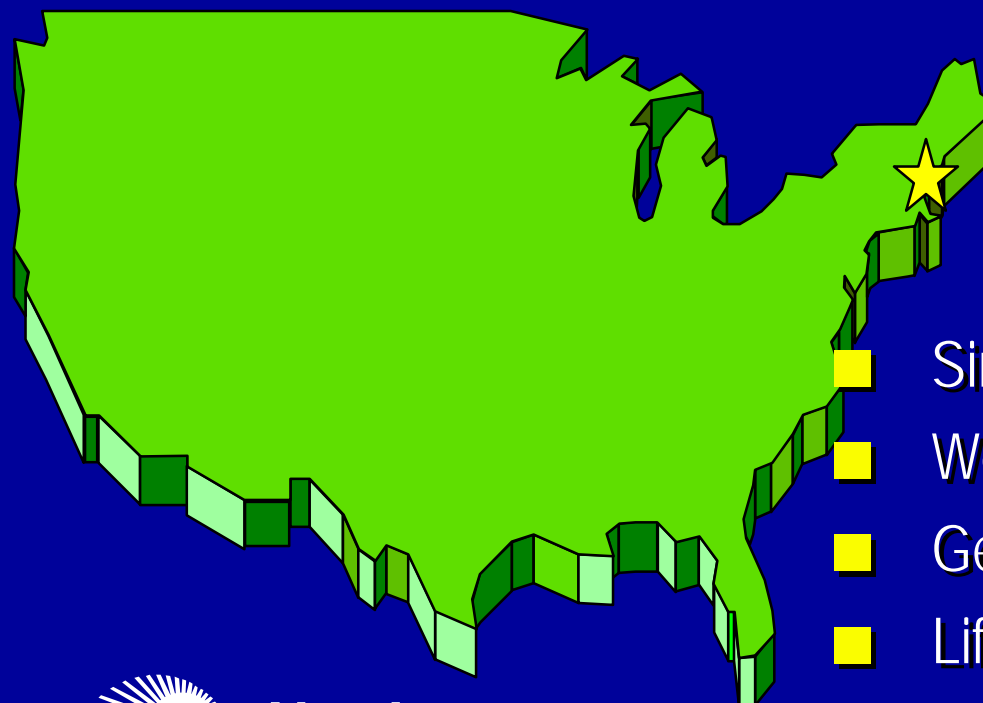
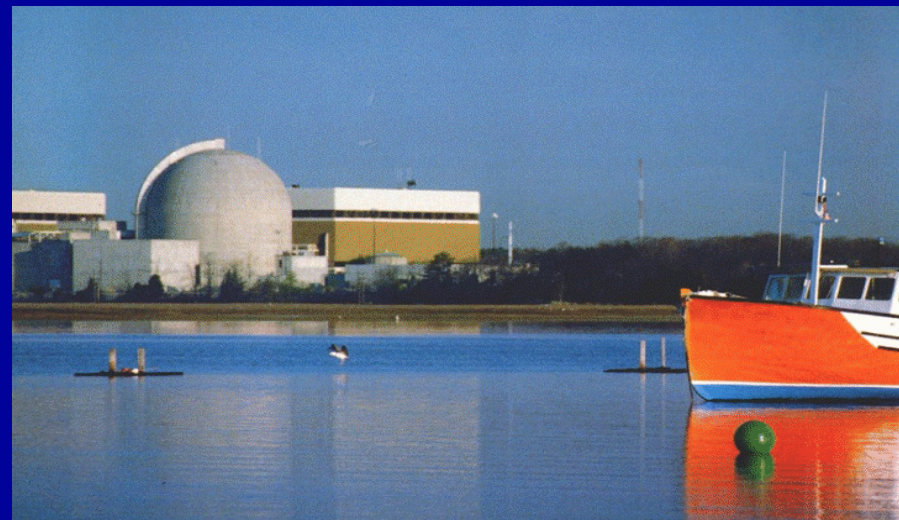
Philip Prugnarola *prugnpl@naesco.com*



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# Seabrook Station



- Single Unit PWR 1150 MWe
- Westinghouse NSSS PWR
- General Electric Turbine Generator
- Lifetime Capacity Factor - 79.9%
- Net Generation - 68+ Billion KWhr



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# Seabrook Station

■ Construction Permit Application -	March, 1972
■ Construction Permit -	July, 1976
■ Initial License (Fuel) -	October, 1986
■ Full Power License -	March, 1990
■ Commercial Operations -	August, 1990
■ License Expiration -	October, 2026



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# Outline

- Project
- Lessons Learned
  - Management focus
  - Assessments
  - Industry Resources
- Current Status



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# Project-Background

- Planning Fall 1996
- Strategy
  - Existing Programs
  - Staff Knowledge & Experience
- Business Systems
- Plant and Support Systems
- NEI/NUSMG 97-07 & 98-07



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# Project - Organization

Steering Committee



Steering Committee	
Brad Jacobson	Accounting Manager
Tim Cassidy	Operator Training Supervisor
Chris Mols	Planning Systems Supervisor
John Linville	Chemistry & Health Physics Manager
Mike Debay	Assistant Operations Manager
Pat Casey	Senior Nuclear Emergency Planning Coordinator
Jerry Peterson	Maintenance Manager
Phil Prugnarola	Information Resources Manager
Kim Zito	Performance Services Supervisor
Bruce Seymour	Security & Safety Manager
Jay West	Records Management Supervisor
Richard Bergeron	Nuclear Design Engineering Manager
Joe Grillo	Nuclear Technical Support Manager

Executive Sponsor  
George Gram  
Director of Support Services

Y2K Sponsor  
Phil Prugnarola  
Information Resources Manager

Y2K Project Manager  
Nicki Durand

System Engineers

Department Contacts



Millennium Department Contacts	
Kim Zito	Site Support
Ann Marie Chesno	Maintenance Technical
Patrick Ryan	Security
Stella Dumais	Administrative Support
Jay West	Records Management
Marty Peters	Inventory
Jeff Warnock	Procurement Engineering
Steve Peck	Purchasing & Contracts
Lynn Satterfield	Engineering
Greg Kann/Larry Rau	Engineering Performance
Neil McCafferty	Technical Support
Tom Sorrentino	Financial Support
Robert Jones	Quality Control
Tim Cassidy	Training
Henderson Holman	Procedure Group
Mike Orlandella	Planning & Scheduling
Gary Mazzone	Health Physics
David Robinson	Chemistry
Fred Haniffy	Radwaste
Shawn Miller	Operations
Jack Adams	Mechanical Maintenance
Mike Toole	Instrumentation & Control
Tim Cooper	Electrical Maintenance

Millennium IT Coordinators  
Robyn Clark  
John Lewallen  
Tracy O'Dea  
Scott Byron  
Bruce Stephens  
Judi McKee

IT Technology  
Brian Miles  
Dennis Roux  
Chris Howard  
Nicki Durand

Infrastructure  
Hardware  
Process  
Computers  
Applications

Communications  
John Lewallen  
Judi McKee

Embedded Systems Coordinator  
Mark Mills

Embedded Systems Lead  
(Tagged Part Equipment)  
Neil McCafferty

Contingency Planning  
John Lewallen

ISO New England Coordinator  
John Tefft

Oversight  
Jamie Watts

Critical Suppliers  
Charlie Heckscher  
Bruce Stephens

Legal  
Rich Early

M&TE  
Bill Hinton  
Dave Lahti

E-Plan  
Pat Casey

Reg. Compliance  
Sheryl Wookey

Embedded System Engineers  
Tom Carr - CO, CL, IA, MS, MSS, RIVIS, SA  
Tom Stetson - FH  
Paul Brangiel - DG, DGA, DGB, CS, FW, SSPS  
Lou Cedrone - CP, DF, FP, SFD, VB, FO  
Ron Guthrie - CBS, PAC, AR, CC, RS, SCC, SF, WL, WLD, WS, BRS, LD, SPC  
Dave Hudson - ED, EDE, SY  
Joe Mumford - SCW, CW, SW, AS, ASH, AB, ASC, RC, RH, RMW, SI, SM  
Janet Patterson - SC, CGC, DM, NI, IC, CAH, CAS, CAP, CDP, RR, SS, WT, HG, HWR/HWS, NG, WAH  
Steve Westin - CD, SO, SSS, TH, VG, HGG, HT, HF, WG, EHC, MET, RM, TSI, GSC  
Bill Yingling - SAN, EAH, FPA, GAH, MM, PAH, SGA, SWA, TAH, EX, ETA, FAH, DAH, EPA, MD, AAH, CBA, CLA, HD, SLA

Test Procedure Writer  
Dewey Faulhaber



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g:\na\mllog\ops

..... Matrix

# Project - Inventory

Category	Equipment	Firmware / E-Prom	Software	Total
Safety Implication	12	3	8	23
Plant Trip	15	7	3	25
Generation Reduction	3	3	1	7
Regulatory Requirement	45	28	100	173
Business Critical	294	16	314	624
Minimum Impact	76	16	176	268
No Impact	39	3	159	201
Total	484	76	761	1321



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# Project - Strategy

Impact( if failure occurs)	Accept As Is	Fix or Test	Replace	Eliminate	Total
Safety Implication	18	5	0	0	23
Plant Trip	12	13	0	0	25
Generation Reduction	1	6	0	0	7
Regulatory Requirement	84	73	12	4	173
Business Critical	335	138	110	41	624
Minimum Impact	191	38	24	13	266
No Impact	154	17	10	22	203
Total	795	290	156	80	1321



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# Project - Process

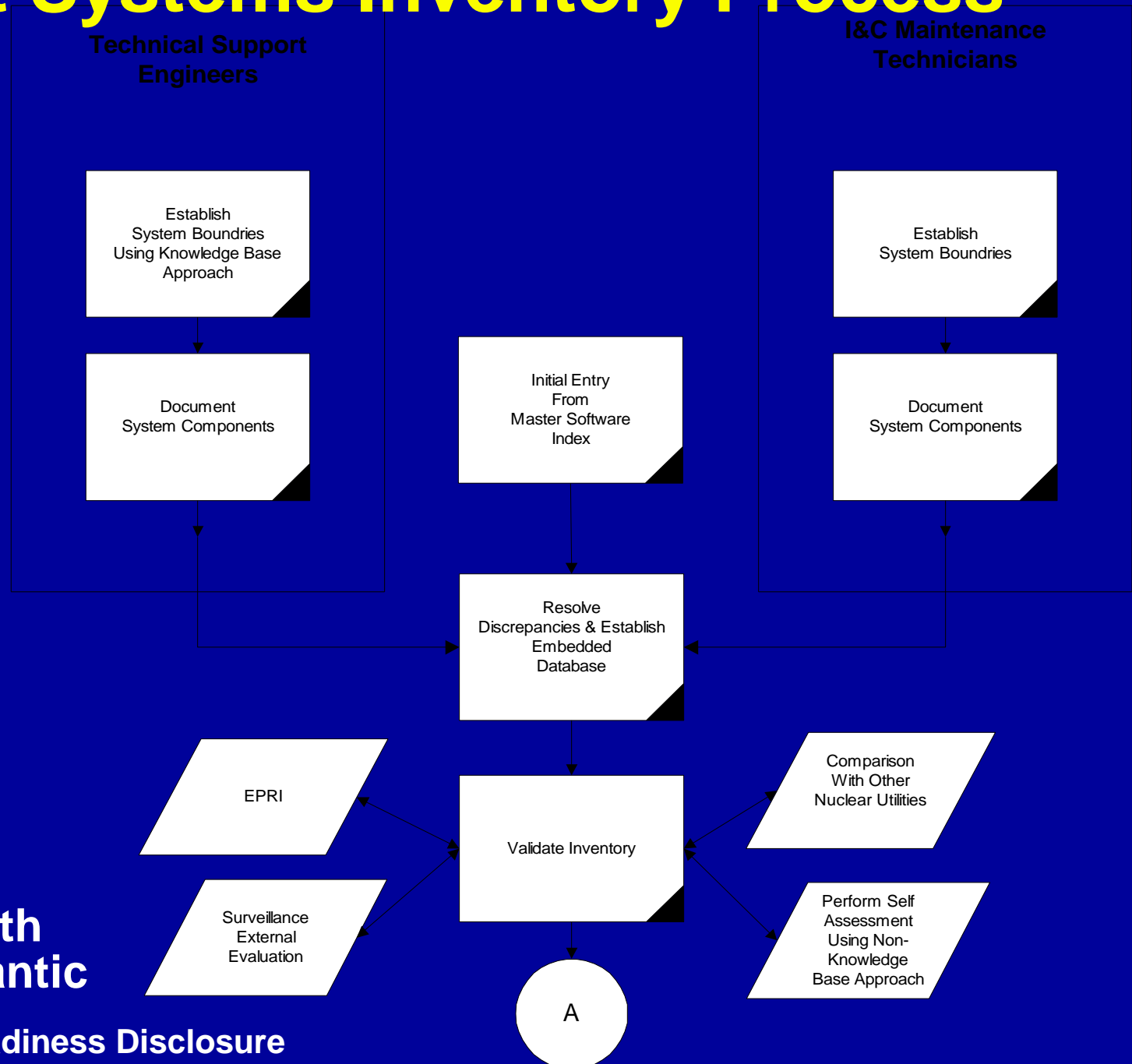
■ Awareness	1997-2000
■ Inventory	10/1996 - 5/1998
■ Detail Assessment	5/1997- 8/1998
■ Remediation	5/1997 - 11/1999
■ Testing & Validation	8/1997 - 11/1999
■ Contingency Planning	9/1998 - 11/1999



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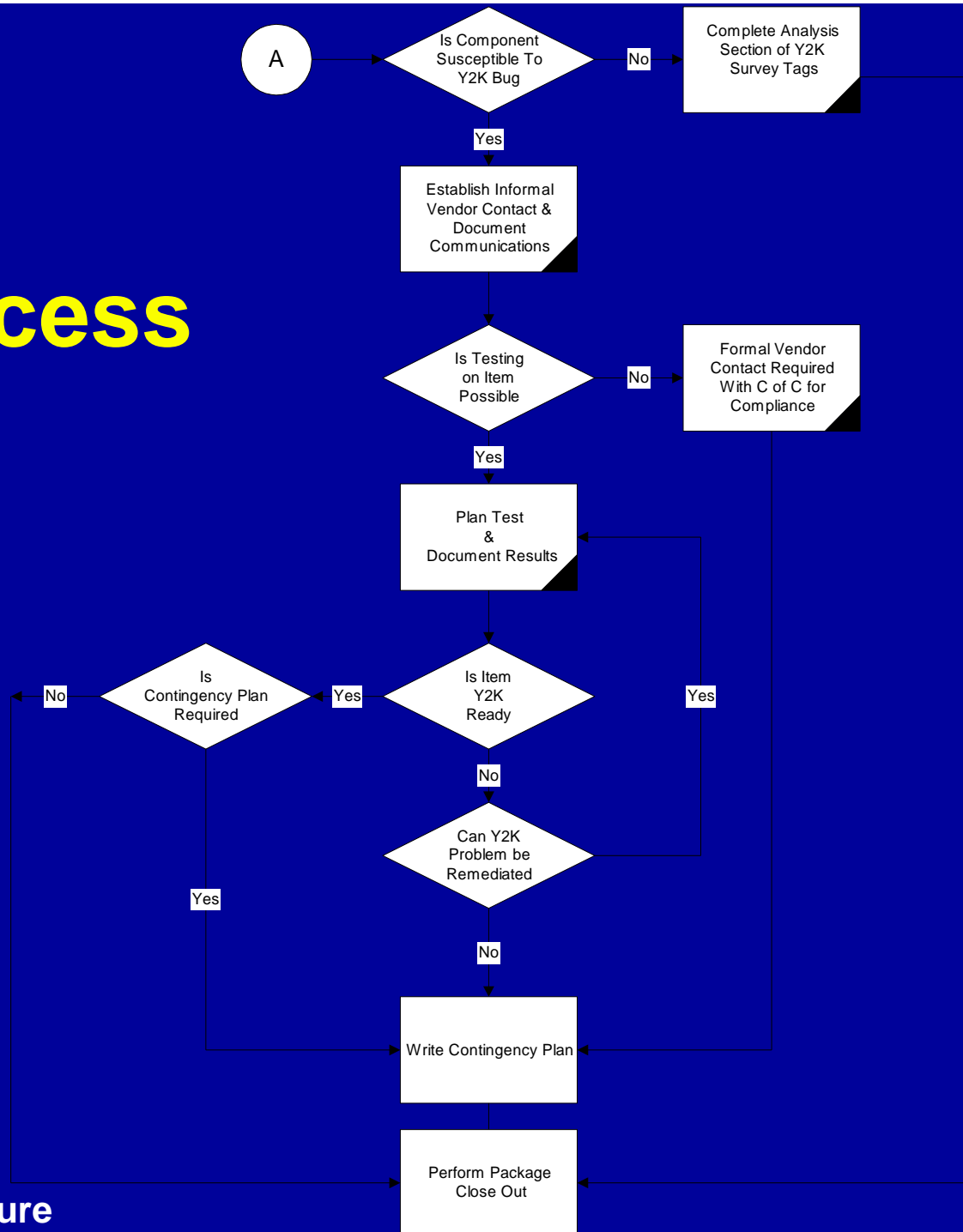
# Plant Systems Inventory Process



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# Plant System Analysis Process



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# Lessons Learned


- Management Focus
- Assessments
- Industry Resources




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# Management Focus - Station Top Ten



Add ConditionSearchReset

New Item

Station Top Ten

My Top Ten

Any Top Ten

Charts


By Department

All Items

Closed Top Ten

Close

Rank	Work Item Title	Lead
1	IMPROVE INDUSTRIAL HEALTH AND SAFETY PERFORMANCE	Bill DiProfio
2	CONTINUE HUMAN PERFORMANCE IMPROVEMENT	Bill DiProfio
3	MEET ORO6 GOALS	Rich Anderson
4	COMPLETE Y2K CORRECTIONS	Nicoletta Durand
5	COMPLETE WAND AFI RESPOSE ACTIVITIES	Peter M. Richardson
6	IMPROVE THE WORK ENVIRONMENT	George R. Gram II
7	REDUCE THE WORK REQUEST & CORRECTIVE ACTION BACKLOGS	Richard J. Sherwin
8	IMPROVE NON-RADIOLOGICAL ENVIRONMENTAL PERFORMANCE	John B. Hart
9	COMPLETE NEW CBA SAFETY RELATED SYSTEM INSTALLATION	Bruce E. Beuchel
10	IMPROVE STATION FACILITIES	Peter J. Stroup
Click on "Closed Top Ten" at left to view closed items. John G. Tefft Updated 11/30/98.		

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# Management Focus



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## Seabrook's Key Performance Indicators Report for the Week of August 2 to August 8, 1998

### The Big Picture

Meeting Goal	Needs Improvement	Weakness
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#### Seabrook Station KPI's

Plant Health	Work Control	Corrective Actions	License Issues	Procedures	Engineering	OR06 KPIs	Work Week Process KPIs
Installed T-Mods <15	Schedule Adherence 90%	Open ACR Evaluations <150 by 12/28/98	LARs Substantial Past Due 0	Open Maint. Procedure Issues ≤ 400 by 6/27/98	Approved '98 DCR/MMODs Awaiting ENG 0 by 9/19/98	OR06 Minor Contracts to PE All by 9/4/9	Package Prep Milestones
WR Backlog ≤450 by 12/28/98	ReWork <5%	Open 'A' ACR Evaluations ≤ 5	Notice of Violations 0 ILLs ≤ 6 IVs ≤ 3 NCs	Open OPS Procedure Issues <200 by 6/30/98	Approved '98 Design Changes FWC 57 by 12/31/98	Work Request Submitted to Planning ALL by 10/24	Wrs to Planning by T-11 Goal 95%
MCB Deficiencies ≤ 3	Priority 2 Cycle Time < 30 Days	Open 'B' ACR Evaluations ≤50 by 12/31/98	Open NRC Commitments 0 Over due	BOP Outstanding Issues ≤ 50	DCNs PER Design Change 2.0 DCN/DC	RTSs Submitted to Planning ALL by 10/24	Wrs part of T 10 Agenda without Engineering Holds Goal 95%
OPS Impact Items Repairable On-Line <6 by 10/31	Priority 3 Cycle Time <150 Days	Open ACR CA's <400 by 12/28/98	LERs ≤ 5 In 1998	Procedure Conversion ≤ 2271 by 5/2/98	EWR Backlog Trend <350 by 12/31/98	OR06 DCR/MMOD Awaiting Engineering 0 by 10/2/98	Causes for Fallout after T 4 Freeze
WR for Contaminated Leakers >15 Days Old 0 by 10/24/98	Unplanned Entry into LCO's ≤ 3 Per Week	Open ACR CA's >90 Days ≤ 1 by 12/2/98	Millennium Compliance Analysis by 6/28/98 Plans by 8/1/98			DCR/MMOD requiring LLBO Resolution All resolved by 5/23	% of Available Backlog Worked
Catch Containers >150 days old ≤ 3 by 9/5/98	Part Availability to Work Weeks > 90%	Field Observation Rate 100%/Week					
Appendix "R" Fire Protection Disablements >90 Days Old 0	Station Person-Rem <14 on 12/31/98	Long Standing INPO Findings 0 by 11/7/98					
	Safety Related Backlog ≤ 3 WR > 150 days old by 9/26	TDR ≤ 400 by 12/26/98					

#### Bottom Line

Regulatory Performance Trend	Industrial Safety	Seabrook's Environmental Performance	Performance Cost
10	≤ 35 First Aid Cases in '98	10	1.86¢ per KWH

# Management Focus -KPI Weekly Reviews

## Millennium Project Final Signoff Status

as of 01/02/99

for Safety Implication, Plant Trip, Generation Reduction, Regulatory  
Requirement and Business Critical

Cost Center	MaintainerCCName	Scheduled to Date	Total Completed	Total Scope	Scheduled Adherence	Late	Scheduled for Completion					Maintainer Department Y2K Contact	Maintainer Department Manager	Mille Project Cons
							01/03 - 01/09	01/10 - 01/16	01/17 - 01/23	01/24 - 01/30	01/31 - 02/06			
	Employee Relations - D. Charney	5	2	5	40%		Steering Committee - Jacobson							
9AL	Employee Relations	5	2	5	40%	3						Sorrentino	Charney	John L
	Licensing Services - T. Harpster	3	2	3	67%		Steering Committee - Jacobson							
9BI	Emergency Preparedness	3	2	3	67%	1						Sorrentino	Tailleart	John L
	Nuclear Oversight - M. Carmichael	5	1	5	20%		Steering Committee - Jacobson							
9BW	Oversight Department	5	1	5	20%	4						Jones / Marchi	Carmichael	Roby
	Unit Director - W. Diprofo	27	24	36	89%		Steering Committee - Molis / Cassidy							
9BN	Training Department	4	1	13	8%	3						Cassidy & Grew	Hickok	Scott
9CD	Assistant Unit Director	12	12	12	100%							Sovetsky/Garriepy	Boissy	Judi I
9CE	Planning & Scheduling	11	11	11	100%							Orlandella	Sherwin	Roby
	Chemistry & HP - J. LeLand	20	19	29	95%		Steering Committee							
9DO	Health Physics	5	5	9	56%						1	Mazzone	Cash	Bruce S
9DP	Chemistry	8	7	13	54%	1					1	Robinson	LeLand	John L
9CM	Radwaste Department	7	7	7	100%							Haniffy	Anderson	John L
	Maintenance - J. Peterson	30	46	102	153%		Steering Committee - Peterson							
9CK	Maintenance Technical	29	46	101	46%						64	Hinton / Lahti	Chesno	Roby
9CL	Instrumentation & Controls	1	0	1	0%	1						Kurt Douglas	Toole	Roby
	IRG - P. Prugnarola	330	301	515	91%		Steering Committee - Prugnarola							
9BE	Information Services	71	62	75	83%	9					1	Durand	Durand	Nicki
9BF	Infrastructure	229	186	309	60%	43				4	17	Miles	Miles	Byron /
9DR	Computer Engineering	29	30	50	60%					3		Howard	Howard	John L
9DS	Computer Services	1	23	81	28%							Roux	Roux	Scott
	Maintenance Services - M. Lewis	5	5	6	100%		Steering Committee - Zito							
9BZ	Equipment/BTL/ Communications	3	3	4	75%							Zito	Mizzau	Judi I
9BG	Facilities	2	2	2	100%							Zito	Mizzau	Judi I
	Support - G. Gram	4	6	6	150%		Steering Committee - Seymour / West / Jacobson							
9BA	Nuclear Finance	1	1	1	100%							Sorrentino	Jacobson	John L
9DQ	Security Dept	0	2	2	100%						2	Ryan	Seymour	John L
9AQ	Office Services	2	2	2	100%							Dumais	Giarrusso	Roby
9AO	Inventory Department	1	1	1	100%							Peters	Maynes	Roby
	Engineering - J. Vargas	32	7	138	22%		Steering Committee - Bergeron / Grillo							
9EK	Mechanical Engineering	4	4	4	100%							Satterfield	White	Roby
9EL	Engineering Performance	1	1	1	100%							Rau / Kann	Nichols	Roby
9EP	Electrical Engineering	2	2	2	100%							Satterfield	Bergeron	Roby



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# Assessments

## ■ Feedback

- Expectations & Standards
- Communications
- Documentation

## ■ Resources

- Nuclear Oversight Organization
- Northeast Energy Alliance Y2K Readiness Team
- Joint Owner Audit Committee
- Northeast Utilities Internal Auditors



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# Industry Resources

## ■ Information Sharing

- Re-invent
- Check & balance

## ■ Resources

- NUSMG & NEI
- Northeast Energy Alliance
- EPRI
- ISO New England
- Westinghouse Owners Group



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# Current Status

- To date no safety related impacts
- 1999 failure modes
- 2000 failure modes
- Majority of work Business & Support systems



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