INDIAN POINT 2

REACTOR & FUEL ENGINEERING

YEAR 2001 BUSINESS PLAN

J. Weiss		
PLAN MANAGER:	SUBMITTED	DATE 12/15/00
Geoffrey Schwartz		
Concurrence		Date 12/15/00
J. BAUMSTARK	Approved	
SENIOR MANAGEMENT SPONSOR	APPROVED	DATE 12/15/00

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1. Business Plan Summary

REACTOR & FUEL ENGINEERING

OVERVIEW:

1. To assure an adequate fuel supply is available in a timely manner and at a competitive cost. This includes the procurement of uranium (U3O8 – yellowcake), conversion to hexafluoride (UF6), and enrichment services.
2. To perform reactor engineering functions to support the operation of the plant, including surveillances, startup physics testing and providing assistance to the Operations organization.
3. To resolve the IP2 Spent Fuel Pool issues related to the degradation of the Boraflex panels in the Spent Fuel Racks.
4. To resolve the IP2 spent fuel storage issues, in order to maintain full core discharge capability.

GOALS:

1. Upgrade IP2 Fuel Storage Building ("FSB") Crane.
2. Engineer, Design and License an On-Site, Small "Staging" ISFSI.
3. Engineer, Design and License an On-Site, "Life-of-Plant" ISFSI.
4. Purchase Neutron Poison Inserts for Use in IP2 Spent Fuel Racks.

Note, progress on these goals is dependent on discussion with Entergy and their allocation of resources to accomplish them.

EXPECTED 2001 RESULTS:

1. 125-Ton Capacity, Single-Failure-Proof Crane Installed.
2. Construction Permit from the Town of Buchanan and Permission from the NRC Under 10 CFR Part 72.
3. Construction Permit from the Town of Buchanan and Permission from the NRC Under 10 CFR Part 72.
4. Decision Concerning Use of Neutron Poison Inserts Beginning in 2001.

Note, results dependent on discussion with Entergy and their allocation of resources to accomplish them.

Note, progress on the goals and achievement of the Expected 2001 Results above are dependent on discussion with Entergy and allocation of their resources to these areas.

2. Action Plans

REACTOR & FUEL ENGINEERING

Spent Fuel Storage				
GOAL	**ACTIONS**	**OWNER**	**COMPLETION DATE**	**STATUS**
Maintain full core discharge capability	Decide on how much PFS space to reserve for Indian Point 2	Sanchez	5/1/01	
	Send out RFQ for onsite storage system	Sanchez	6/1/01	
	Complete Site studies (soil, radiological, etc.)	Sanchez	7/1/01	
	Sign contract for onsite storage system	Sanchez	8/1/01	
	Complete Part 72 review and Part 50.59 USQE	Sanchez	12/31/01	

Fuel Storage Building Crane Upgrade				
GOAL	**ACTIONS**	**OWNER**	**COMPLETION DATE**	**STATUS**
Maintain full core discharge capability	Sign contract for new Fuel Storage Building Crane	Sanchez	5/1/01	
	Release vendor to commence fabrication of new crane	Sanchez	7/1/01	
	Crane Mod package and safety evaluation report complete and Tech Spec Change Request submitted	Sanchez	12/31/01	
	Complete design of Fuel Support Building Mods	Sanchez	12/31/01	

REACTOR & FUEL ENGINEERING

Spent Fuel Pool Storage Racks				
GOAL	**ACTIONS**	**OWNER**	**COMPLETION DATE**	**STATUS**
Maintain Full Core Discharge Capability	Complete IFBA and BU Credit Analyses	Y. Yuan*	4/1/01	Bid technical evaluation complete (9/00)
	Complete solubile Boron Credit Analysis/Detailed Criticality Analysis	Y. Yuan*	4/1/01	Bid technical evaluation complete (9/00)
	Submit licensing request to NRC	Y. Yuan*	6/1/01	
	Receive NRC approval	Y. Yuan*	12/31/01	
	*Note, this Action plan will require reassignment as Y. Yuan anticipates leaving the IP 2 organization around 12/31/00			

Note, accomplishment of these three Action Plans is subject to discussion with Entergy and their allocation of resources to implement them.

4. Project Requests

The following Projects and Programs are being planned in 2001

Item	Project/Program Title	Estimated Con Ed Hours	Estimated Outside Support
4.1	Improved Standard Technical Specifications	100	
4.2	Boraflex Degradation Studies & Resolution	1,000	
4.3	Spent Fuel Storage Design and Licensing	1,600	
4.4	UFSAR Verification	500	
4.5	Fuel Storage Building ("FSB") Crane Procurement and Upgrade Installation	400	
4.6	FORMOSA Model Development	120	
4.7	IP2 Divestiture	240	
4.8	Post IP 2 Sale Fuel Inventory Disposal and Contract Closure	720	
	Total Estimated Con Ed Person Hours	**1,060**	
	Total Estimated outside Support		

Regarding Con Ed resources: work hours will only be used to support projects 4.1, 4.7 and 4.8. and Outside Support $'s will only be used to support FORMOSA Model Development. For all other project's resources, both personnel and Outside Support $'s, are subject to discussion with Entergy.

Indian Point 2
2001 Project Request

1) Title: Improved Standard Technical Specifications

2) Project #: 4.1

3) Description: Develop and submit for NRC approval, revised Technical Specifications in the new standard format, replacing the current custom Tech Specs. The Reactor and Fuel Engineering role in this project is to review Section II related to reactor engineering and nuclear fuel.

4) Justification: See NS&L Project Request form.

5) Indian Point 2 Goals and Strategies Supported: Operate within threshold regulator performance (G), License Extension (S)

6) Budget:

Dept	Account	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		0		100		0		100	
	TOTALS:	0		100		0		100	

7) Lead Department: Nuclear Safety & Licensing

8) O & M: X **Capital:**
XM:

9) Proposed By: John Weiss **Date:**

10) Lead Dept. Mgr. Approval: **Date:**

11) 2000 Budget Approval By: **Date:**

12) Notes: Per Bill Blair, R&FE participation is anticipated to be minimal
Assume the 100 Hours in 2001 are used in Jan and Feb.

Indian Point 2
2001 Project Request

1) Title: Boraflex Degradation Studies & Resolution	**2) Project #:** 4.2

3) Description: This project will study the impact of loss of boron from the boraflex in the spent fuel storage racks in the Spent Fuel Pool and develop alternatives for resolution of this issue. This project request will also cover the resources needed to resolve the problem.

4) Justification: To ensure continued compliance with the spent fuel rack design bases and the Technical Specifications

5) Indian Point 2 Goals and Strategies Supported: Safely operate at 95% or greater capacity non-outage. Operate within threshold regulator performance.

6) Budget:

Dept	Activity	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		3340		1000		TBD		4340	
Netco	Scoping Stud								
Netco	BADGER Tstg							0	
Netco	Coupon Retriev & Anal							0	
West.	Relo SFA's								
	IFBA & BU Credit Anal								
	Sol B Credit Anal/Detailed Crit Anal								
NS&L				80				80	
Syst Engr		20		40				60	
	TOTALS:	3360		1120				4480	

7) Lead Department: Reactor & Fuel Engineering	**8) O & M:** X **Capital:** **XM:**
9) Proposed By: Y. Yuan	**Date:**
10) Lead Dept. Mgr. Approval:	**Date:**
11) 2000 Budget Approval By:	**Date:**

12) Notes:
NS&L is for support with license amendment.
System Engineering is for collection of data needed for analyses
In 2001, is for purchase and installation of "RACKSAVER" for the Spent Fuel Racks and is for licensing of this product with the NRC. These resource estimates are preliminary.

Indian Point 2
2001 Project Request

1) Title: Spent Fuel Storage Design & Licensing | **2) Project #:** 4.3

3) Description: This project will study alternative ways of maintaining full core discharge capacity in the Spent Fuel Pool (SFP). The SFP can hold 1374 fuel assemblies. With addition of ~84 fuel assemblies each Refueling Outage, full core discharge capacity will be lost by 2004, well before the current license expires in 2013. On-site Independent Spent Fuel Storage Installation and Off-site Private Spent Fuel Storage Facility options will be chosen and implementation will begin.

4) Justification: To ensure operation is not interrupted or negatively impacted by insufficient spent fuel storage space.

5) Indian Point 2 Goals Supported:

6) Budget:

Dept	Account	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE Eng. Costs	B1851	1600		1600		1600		4800	
DE-Civil				300		400		700	
DE-Mech				60		200		260	
DE-Elec.				60		200		260	
Site Engr				80		160		240	
NS&L				200		400		600	
QA				840		840		1680	
Purchasing				80				80	
Communic				100		160		260	
Security				40		100		140	
Fabricate Stor.Sys.									
	TOTALS:	1600		3360		4060		9020	

7) Lead Department: Reactor & Fuel Engineering | **8) O & M:** | **Capital:** X | **XM:**

9) Proposed By: John Sánchez | **Date:**

10) Lead Dept. Mgr. Approval: | **Date:**

11) 2000 Budget Approval By: | **Date:**

12) Notes: * is in the O&M 2000 Budget to start implementing the option chosen. This money will not be needed as resources to implement the option chosen will be provided separately via Company Retirement Accounts.

Assume the 1600 hours in 2001 are used roughly evenly throughout the year.

Indian Point 2
2001 Project Request

1) Title: UFSAR Verification	**2) Project #:** 4.4
3) Description: This project will verify the accuracy and completeness of the UFSAR and provide a fully electronic UFSAR, a Component Function Database, and provide for the resolution of Condition Reports generated as a result of the verification effort. The R&FE role in this project is to review and approve assigned UFSAR segments.	
4) Justification: See Configuration Management & Control Project Request.	
5) Indian Point 2 Goals Supported: See Configuration Management & Control Project Request.	

6) Budget:

Dept	Account	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		360		500				860	
	TOTALS:	360		500				860	

7) Lead Department: Configuration Management & Control	**8) O & M:** X **Capital:** **XM:**
9) Proposed By: John Weiss	**Date:**
10) Lead Dept. Mgr. Approval:	**Date:**
11) 2000 Budget Approval By:	**Date:**
12) Notes: Assume the hours allocated to this effort are used in Jan, Feb and Mar.	

Indian Point 2

2001 Project Request

1) Title: Fuel Storage Building (FSB) Crane Upgrade | **2) Project #:** 4.5

3) Description: Prior to removing spent fuel from the Spent Fuel Pool (SFP), the FSB and crane must be upgraded to meet physical requirements and licensing commitments associated with handling heavy loads (NUREG-0612). The scope of this project is: a) Replace the existing 40-ton crane (non-single failure proof design) with two (2) 75-ton capacity single failure proof cranes to provide a 125 ton capacity lifting capability; b) Upgrade the auxiliary hoist to single failure proof design; c) Install an "intermediate cask platform"; d) Replace the existing open 3-wire conductor system with a 4-bar enclosed system; e) Incorporate additional bracing angles, irons, stiffener plates, etc. in sections of the building requiring a reduction in any overstressed conditions; and f) Install a heavy haul trailer support.

4) Justification: This project is necessary prior to removal of spent fuel from the SFP. Removal of spent fuel will be necessary to maintain full core discharge capability to ensure plant operation is not interrupted or negatively impacted by insufficient spent fuel storage space.

5) Indian Point 2 Goals and Strategies Supported:

6) Budget:

Dept	Accnt	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		120		400		400		920	
DE-Civil		100		400		600		1100	
NS&L				40		80		120	
Engr Costs									
FSB Mod									
Crane Upgrade									
QA				360		360		720	
Site Engr				80		160		240	
Purchasing				60				60	
TOTAL		220		1340		1600		3160	

7) Lead Department: Reactor & Fuel Engineering | **8) O & M:** | **Capital:** X | **XM:**

9) Proposed By: John Sánchez | **Date:**

10) Lead Dept. Mgr. Approval: | **Date:**

11) 2000 Budget Approval By: | **Date:**

12) Notes: *Funding is being provided separately via Company Retirement Accounts.
Assume the R&FE hours in 2001 are 25, 25, 50, 50, 100, 100, 100, 100, 100, 50, 50, 50 for Jan-Dec

Indian Point 2
2001 Project Request

1) Title: FORMOSA Model Development	**2) Project #:** 4.6

3) Description: FORMOSA-P is a computer code that automates the process of determining fuel and burnable absorber loading patterns. This model development utilizes stochastic optimization techniques to determine a family of near optimal loading patterns which can then be further evaluated by the core designer.

4) Justification: Use of this code will result in better optimization of the core loading pattern reducing fuel costs.

5) Indian Point 2 Goals Supported:

6) Budget:

Dept	Account	2000+ Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		120		120		120/yr		360	
	TOTALS:	120		120		120/yr		360	

7) Lead Department: Reactor & Fuel Engineering	**8) O & M:** X **Capital:** **XM:**
9) Proposed By: Benito Quan	**Date:**
10) Lead Dept. Mgr. Approval:	**Date:**
11) 2000 Budget Approval By:	**Date:**

12) Notes: Assume the hours are split evenly throughout the year and that the is spent in June.

Indian Point 2
2001 Project Request

1) Title: IP 2 Divestiture	**2) Project #:** 4.7
3) Description: Provide support for the IP 2 Divestiture team.	
4) Justification:	
5) Indian Point 2 Goals Supported:	
6) Budget:	

Dept	Account	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		320		240				560	
	TOTALS:	320		240				560	

7) Lead Department: Reactor & Fuel Engineering	**8) O & M:** X **Capital:** **XM:**
9) Proposed By: John Weiss	**Date:**
10) Lead Dept. Mgr. Approval:	**Date:**
11) 2000 Budget Approval By:	**Date:**
12) Notes: Assume the 2001 hours are used in the first 6 months.	

Indian Point 2
2001 Project Request

1) Title: Post IP 2 Sale Fuel Inventory Disposal & Contract Closure	**2) Project #:** 4.8
3) Description: Resources would be needed to sell Con Ed nuclear fuel inventories if they are not a part of the divestiture transaction. Also, resources would be needed to close the Con Ed nuclear fuel related contracts following any divestiture.	
4) Justification:	
5) Indian Point 2 Goals Supported:	
6) Budget:	

Dept	Account	2000 + Prior		2001		2002 + Future		**Project Total**	
		Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)	Con Ed Hrs.	Outside $s (000)
R&FE		0		720		0		720	
	TOTALS:			720				720	

7) Lead Department: Reactor & Fuel Engineering	**8) O & M:** X **Capital:** **XM:**
9) Proposed By: Joe Pezzello	**Date:**
10) Lead Dept. Mgr. Approval:	**Date:**
11) 2000 Budget Approval By:	**Date:**
12) Notes: Assume the 2001 hours are used in the 2nd and 3rd quarters.	

5. Performance Measures

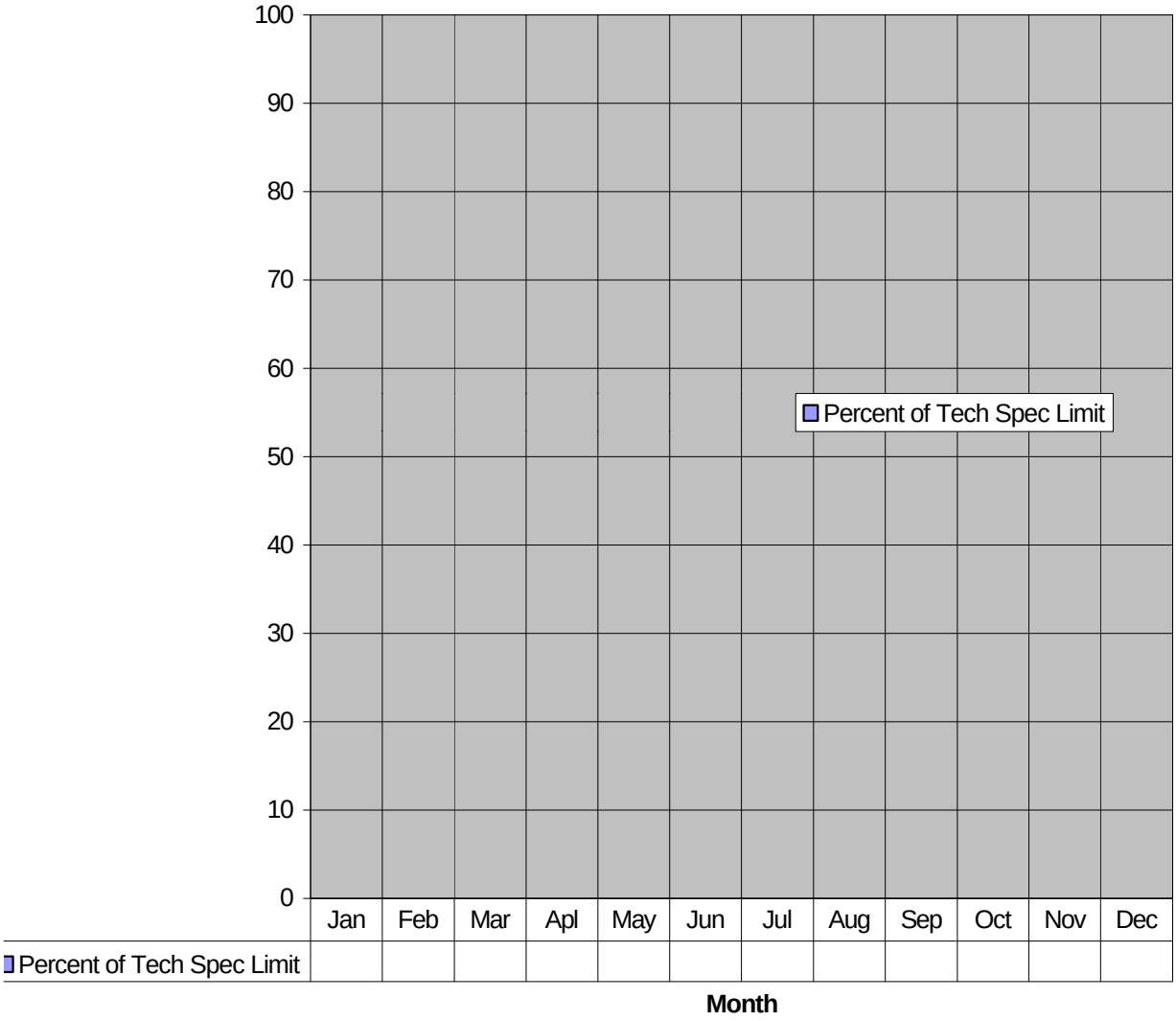
NRC Barrier Integrity Cornerstone

- Reactor Coolant Activity

Department Performance Measures

- Nuclear Fuel Cost

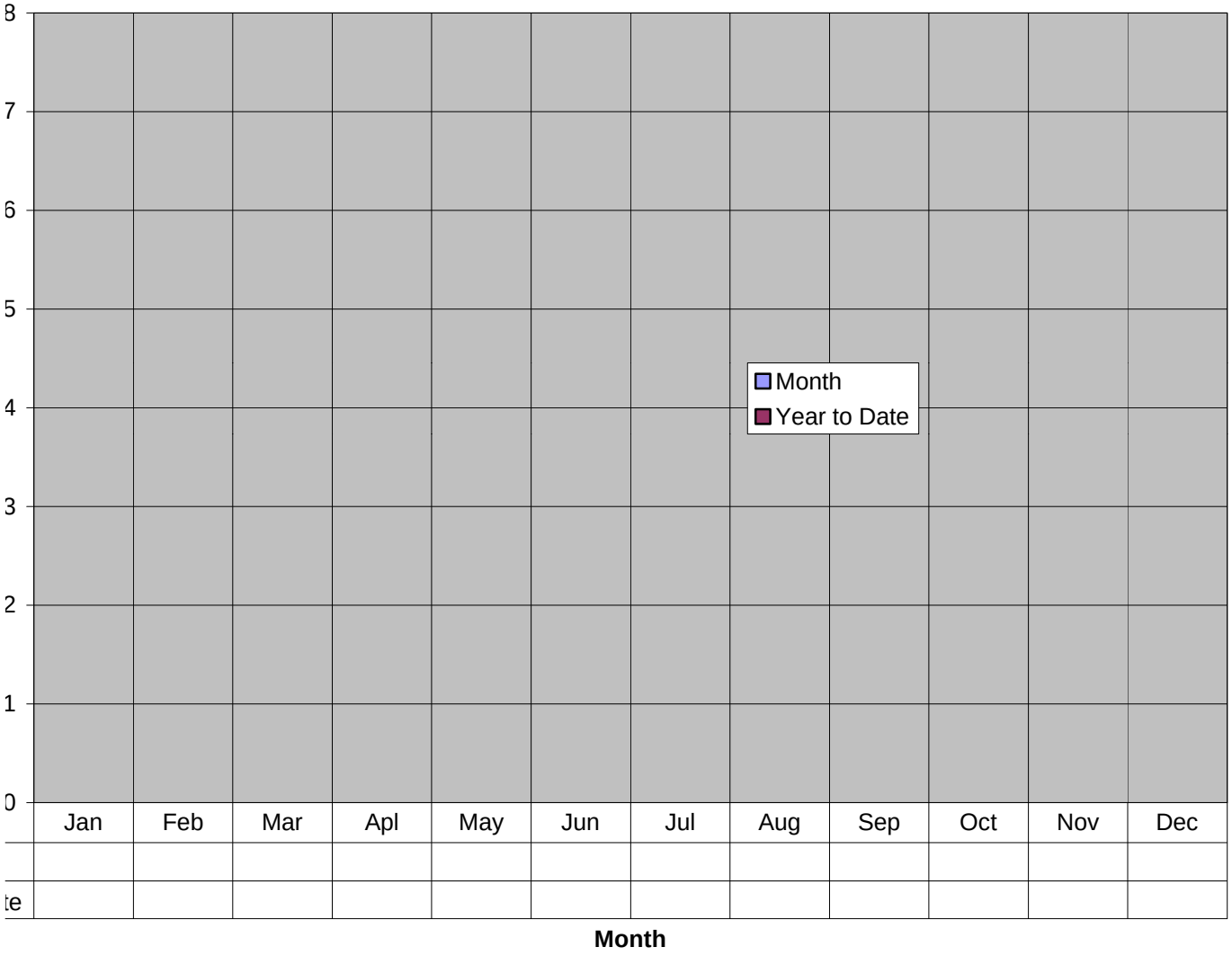
Reactor Coolant Activity 2001



Indicator Description: This indicator is one of the three NRC performance measures in the Barrier Integrity Cornerstone. The maximum calculated RCS activity, in µCi/gm dose equivalent I-131 as a percentage of the Technical Specifications limit of 1.0µCi/gm.
Green is ≤50%, White is >50% but ≤ 100%, Yellow is >100%, Red there is no threshold.

Analysis: Performance prior to the spring 00 RFO was indicative of a very small fuel leak, well below any threshold of regulatory interest. A leaking fuel assembly was identified during the RFO and the bundle was removed from the core.

Nuclear Fuel Cost 2001



Indicator Description: Nuclear Fuel Cost is the cost of the fuel divided by the total generation for the month. For months with no generation, no monthly fuel cost is calculated. In addition the year to date cost is shown as well as the prior years cost.

Analysis:

6. Appendices

6.1 Functional Responsibility

Fuel Supply

- Uranium supply, conversion, enrichment & fabrication, related contract planning and administration.
- Fuel cost accounting and budgeting
- Fuel cycle planning including integration with the electric system, analyses of supply and utilization alternatives
- Special Nuclear Material accountability
- Spent Fuel disposal

Reload Design and Core Management

- Core reload design including fuel management and scoping analyses, safety evaluation and related technical document updates (Tech Specs, FSAR, COLR, etc.)
- Refueling outage support including core unload/reload, fuel inspection and failed fuel evaluations, startup physics testing, etc.
- Core performance monitoring, fuel performance evaluations and operational support including analysis of core flux maps.
- Spent fuel storage (SFP and ISFSI and PSFSF initiatives)
- Decay heat calculations
- Rx fracture toughness and vessel material surveillance programs including fluence calculations.

Reactor Engineering

- Core flux mapping
- Periodic surveillance testing
- Physics testing
- Operations support
- Nuclear instrumentation calibrations

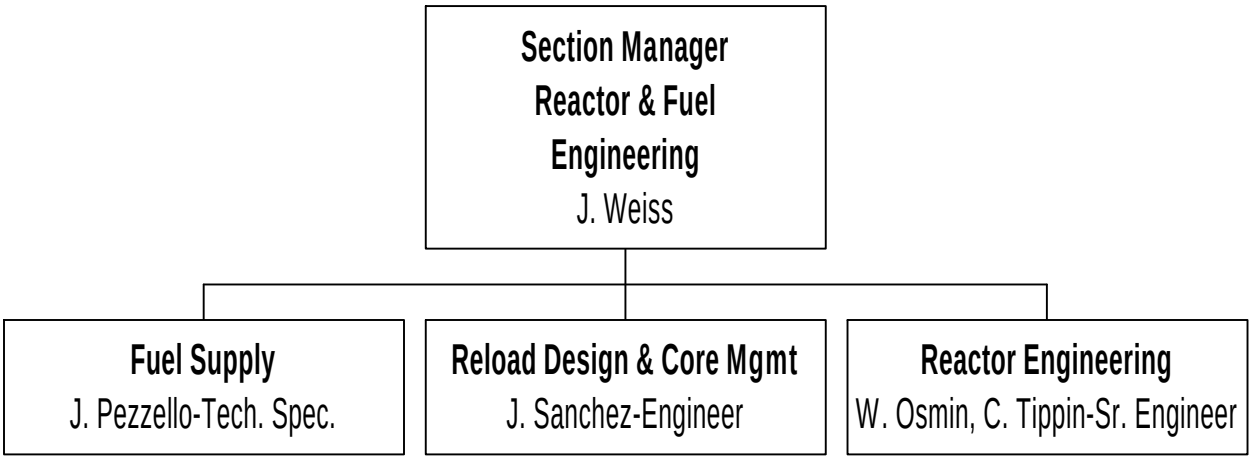
6.2 Personnel Information

Name	Title	Degrees	Professional License	Professional Experience	Con Ed Experience
MANAGEMENT					
W. OSMIN	SR. ENGINEER	MS, NE		24	4
J. SANCHEZ	ENGINEER	JD	PASSED BAR	17	17
C. TIPPIN	SR. ENGINEER	BS MAR ENGR	SRO CERT	19	19
J. WEISS	SECTION MANAGER	PHD, NE, MBA		31	18
J. PEZZELLO	TECHNICAL SPECIALIST	MS, NE, MBA		33	32
WEEKLY					
CONTRACTORS/TEMPORARY					
OPEN OR REQUESTED					

Authorized Positions

	Management	Weekly	Totals
2000 Budget	8	0	8
2001 Approved Budget	5	0	5
Change	**(3)**	**0**	**(3)**

6.3 Organization Chart



			800	
6.4.2	Fuel Supply Contracting	Contracting for and administering contracts for uranium supply, conversion, enrichment and fabrication (Entergy to assume responsibility)	2850	
6.4.3	Fuel Cost Budgeting and Accounting	Annual budget projections for fuel cost and determining actual fuel costs for accounting purposes.	850	
6.4.4	Fuel Cycle Planning	Evaluation of alternative fuel cycle plans, integration with the electric system (Entergy to assume responsibility).	200	
6.4.5	Special Nuclear Materials	Maintenance of Accountability program and conduct of inventories and reporting.	110	
6.4.6	Spent Fuel Disposal	Administration of DOE contract for disposal and protection of Con Ed interests. This function is provided by the Con Ed Legal Department		
6.4.7	Core Reload Design	Monitor and oversee the reload design done by Westinghouse. Anticipate 500 hours in the 1st and 2nd quarters of 2002.	0	
6.4.8	Core Performance Monitoring	Monitoring of fuel/core performance during operation, analyses of in-core flux maps and operational support. is contingency for Nuclear Noise Analysis support.	400	
6.4.9	Spent Fuel Storage	Routine evaluations and decay heat calculations	100	
6.4.10	Reactor Vessel Integrity	Reactor fracture toughness and vessel material surveillance programs including fluence calculations.	50	
6.4.11	Reactor Engineering	Nuclear Instrumentation calibrations, core flux mapping, periodic surveillance testing, physics testing and operations support	3000	

6.4.12	Emergency Planning	Support for emergency planning and participation in exercises and drills.	200	
6.4.13	Misc.	Petty Cash, Benchmarking/Training, Materials & Supplies, All Other, P Card, Communications		
6.4.14	Training	Complete all continuing and qualification training including GET, ESP, etc	400	
6.4.14	NRC Liaison, QA Audit Support, Self Assessments	Support for NRC licensing and inspection activities, QA audits and to conduct department planned self-assessments.	260	
6.4.15	Technical Program Maintenance	SOER96-02 (160 hrs), UNIX Workstation (400 hrs), Procedure Development (Entergy to assume responsibility, 800 hrs)	1360	
6.4.16	Management & Supervision	Time spent in management and supervisory functions including planning, delegation and oversight of work. Assume 50% of Dept Mgr time	1000	
6.4.17	Emergent Work	Time allocated for work that emerges over the course of the year that must be done to support safe and reliable operation.	300	
6.4.18	Vacations, Holidays, Sick and Authorized Leave	V: 6 People X 18 Days ave X 8 hrs ~850 Hrs H: 6 People X 11Days ea X 8 hrs ~500 Hrs S & AL: 6 People X 7 Days ea X 8 hrs ~350 Hrs	1440	
		Total Estimated Con Ed Person-Hours	**9,170**	
		Total Estimated Outside Support		

Note, Items 6.4.2, 6.4.4 and 6.4.15(800 hrs) are not included in the total. Resources for these functions are subject to discussion with Entergy.

6.5 2001 Resource Plan

Section	Item	Estimated Con Ed Person-Hours	Con Ed Labor Dollars (000)	Estimated Outside Support $'s (000)	Total Estimated Dollars (000)
6.4	OPERATIONAL OVERVIEW	9170			
4	Project Requests	1060			
6.4 + 4	Total Resources Needed	10,230			
	Approved 2001 Budget	10,398			

Manpower Analysis

Approved 2001 Budget resources and the Business Plan match. Projects and functions shown that are not budgeted are subject to discussion with Entergy.