



Columbia Generating Station Long-range Planning

What is Long-range Planning?

The act or process of making or carrying out plans involving or taking into account a long period of time. Long-range planning for our purposes is the process of allocating budget to work that maintains or enhances the value of Columbia Generating Station or reduces the long term costs of operation. It's also a forecast of how we plan to spend projected resources within the organization. The budget and the long-range plan provide us with milestones and financial limitations within which we must operate.

The long-range projects plan contains less certainty for each year into the future. Our level of confidence is high for the current fiscal year, less so for the next, and even less for the one after that. Implementation of the Three-phased approach to projects is beginning to help us understand future fiscal years in more detail. The LRP is created through a business planning process that develops and executes multi-year plans that support safe, reliable and cost-effective operation of Columbia.

The LRP is actually a series of documents that identifies costs and projects for the next ten years. The top tier document provides an overview of expenses and cost of power. The second tier documents are the long range plans maintained by PRC, ITPRC, and FPRC. These plans have the details for each Capital and O&M project by fiscal year. The details from the individual projects are combined and used to input to the BPA forecast plan.

Why is the LRP IMPORTANT?

The goal of the LRP is to maximize the value of the station as a regional asset until the end of the plant's operating license. To reach that goal the plant must operate in a reliable, cost responsible manner. Long-range planning supports equipment reliability, replacement of obsolete systems and components, station business initiatives, and the resource planning to support the resulting work. BPA uses the data from the LRP in establishing their rate cases for the region. An accurate LRP is necessary to be able to predict the future cost of power from Columbia.

Our Goal:

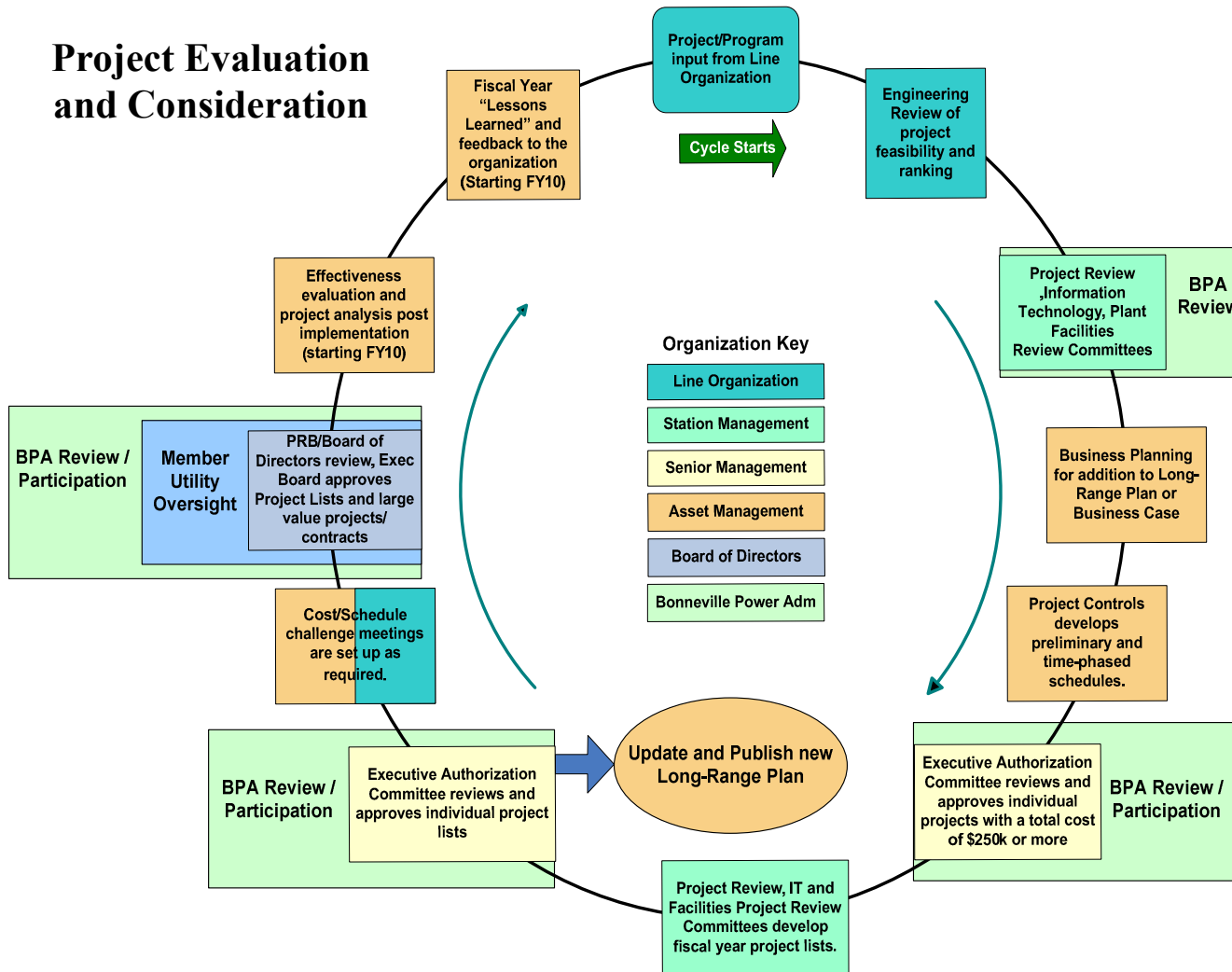
The development, implementation and maintenance of a predictable, reliable and fiscally responsible Long-range Plan (LRP) utilizing a phased approach to project execution

Discovery and consideration of plant projects is done on a continuing basis. During the year, projects are evaluated and ranked as they are reviewed. In the fall of each year the various approval committees take their project lists and apply a “cut-line” based on a risk assessment of the work and the fiscal year budget in the budget plan. An effort is made to ensure that scoping and estimating projects are included to ensure that large or complex projects have adequate support in the

We use work management process to initiate work activities. Anyone may initiate an activity for evaluation. The Plant Project Review Committee (PRC) design review group reviews the activity for feasibility. If the project is practical, then it goes to the PRC for review. Projects over \$250k get a business case to further evaluate options and returns on investment.

The PRC is composed of members from Operations, Maintenance, Outage Management, Engineering and Asset Management. They approve a ranking and funding for the project. The project then goes on the list for the appropriate fiscal year to compete with other projects. Projects are selected in priority by ranking.

Each year, Sr. Management reviews and approves the project list for the next fiscal year. They review and approve changes to the Long-range Plan with a focus on completing critical work. The Executive Board approves the fiscal year project list with the annual budget.



Item Description	Calendar Year									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
	BPA Rate	BPA Rate Period		BPA Rate Period		BPA Rate Period		BPA Rate Period		
Direct and Indirect O&M Costs										
Baseline costs	\$ 119,917	\$ 121,651	\$ 116,347	\$ 114,966	\$ 114,810	\$ 112,999	\$ 113,434	\$ 113,346	\$ 111,885	\$ 116,969
Outage Costs (Incremental)	38,704	932	20,700	932	20,700	932	17,078	932	17,078	518
Admin / General (A&G) O&M includes escalation	60,648	69,062	72,466	73,699	76,745	84,664	88,467	92,550	97,104	103,524
O&M Projects	50,043	9,392	42,981	10,143	43,652	8,302	41,814	8,362	40,832	8,358
Facilities O&M Projects	752	569	569	621	621	621	621	-	621	-
Information Technology O&M Projects	752	160	492	492	233	595	295	160	1,656	160
O&M Risk Reserve	1,593	859	2,070	776	1,656	518	1,656	518	776	518
Outage Risk Reserve	1,095	-	1,122	-	1,123	-	1,035	-	1,035	-
Baseproj Contingency	312	518	518	518	518	518	518	-	518	-
Subtotal Direct & Indirect O&M Costs	\$ 273,816	\$ 203,143	\$ 257,265	\$ 202,147	\$ 260,058	\$ 209,149	\$ 264,918	\$ 215,868	\$ 271,505	\$ 230,047
Escalation on Direct & Indirect	-	4,693	13,163	13,963	27,043	23,363	40,451	33,576	55,251	45,913
Subtotal Direct & Indirect O&M Costs	\$ 273,816	\$ 207,836	\$ 270,428	\$ 216,110	\$ 287,101	\$ 232,512	\$ 305,369	\$ 249,444	\$ 326,756	\$ 275,960
Capital Costs										
PHC Capital Projects	\$ 38,212	\$ 13,175	\$ 21,727	\$ 8,825	\$ 20,559	\$ 7,959	\$ 21,140	\$ 7,580	\$ 25,607	\$ 11,211
Moveable Capital & Downtown Capital Projects	1,720	1,346	1,346	1,346	1,346	1,346	1,346	1,346	1,346	1,346
Facilities Capital Projects	299	10,258	6,200	5,693	1,553	2,329	2,846	1,811	1,811	1,811
Information Technology Capital Projects	5,943	5,183	6,227	7,642	6,185	5,915	6,022	9,587	6,435	6,624
Admin / General (A&G) Cap includes escalation	7,314	8,000	8,100	3,500	6,365	3,623	6,365	3,623	6,521	3,623
Capital Risk Reserve	2,237	3,877	4,028	2,330	3,389	1,983	3,518	1,922	3,867	2,070
Main Condenser Replacement includes escalation	40,870	8,460	-	-	-	-	-	-	-	-
Subtotal Capital Costs	\$ 96,595	\$ 50,299	\$ 47,628	\$ 29,336	\$ 39,397	\$ 23,155	\$ 41,237	\$ 25,869	\$ 45,587	\$ 26,685
Escalation on Capital Costs	-	1,184	2,813	2,809	4,872	3,665	7,994	6,057	12,376	8,369
Subtotal Capital Costs	\$ 96,595	\$ 51,483	\$ 50,441	\$ 32,145	\$ 44,269	\$ 26,820	\$ 49,231	\$ 31,926	\$ 57,963	\$ 35,054
Fuel Related Costs										
Nuclear Fuel Amortization	\$ 30,583	\$ 43,555	\$ 38,081	\$ 49,847	\$ 46,013	\$ 61,734	\$ 56,985	\$ 69,471	\$ 64,502	\$ 74,224
Spent Fuel Fee	7,085	8,918	8,280	9,078	8,280	9,078	8,280	10,200	8,600	8,900
Subtotal Fuel Related Costs	\$ 37,668	\$ 52,473	\$ 46,361	\$ 58,925	\$ 54,293	\$ 70,812	\$ 65,265	\$ 79,671	\$ 73,102	\$ 83,124
Total Unescalated Budget	\$ 408,079	\$ 305,915	\$ 351,254	\$ 290,408	\$ 353,748	\$ 303,116	\$ 371,420	\$ 321,408	\$ 390,194	\$ 339,856
Total Escalation	-	5,877	15,977	16,771	31,915	27,028	48,445	39,633	67,627	54,282
Total Costs - Industry basis	\$ 408,079	\$ 311,792	\$ 367,231	\$ 307,179	\$ 385,663	\$ 330,144	\$ 419,865	\$ 361,041	\$ 457,821	\$ 394,138
Total Net Generation (Gwh)	7,395	9,383	8,313	9,383	8,507	9,383	8,558	9,383	8,598	9,383
Outage Days	78	-	40	-	31	-	29	-	27	-
Cost of Power (Cents per kWh, constant FY11\$)	5.518	3.260	4.225	3.095	4.158	3.230	4.340	3.425	4.538	3.622
Cost of Power (Cents per kWh, escalated)	5.518	3.323	4.418	3.274	4.534	3.519	4.906	3.848	5.325	4.201

Key Assumption/Qualifications

Escalation Rate = 3.5% starting FY 11

Exception Flex Benefits @ 9% in FY11 and FY12, and 7% thereafter

Net generation calculations includes benefits of new condenser

Fuel Amortization updated 08-08-07

Condenser materials costed in FY09/10/11/12

Project Review Committee Project Determination

The Project Review Committee (PRC) uses the project ranking form shown below to determine a score for each project with a total cost above \$50,000, or that require a wide cross section of resources to execute. The Project Manager (PM) determines the initial ranking based on the type of problem and the multiplier which weighs the ranking with the perceived urgency needed to address the problem. When the PRC reviews the project, they can agree to the suggested ranking or change the ranking of a project. The total project score is the sum of the ranking value and the urgency multiplier.

Sub-Rank

4

3

2

1

PROJECT RANKING FORM				
AR NUMBER:			Screened By:	
Subject:				
SAFETY	RANKING	MULTIPLIER	TOTAL	
Nuclear Safety (preferably based on high PSA significance)	5	X		
Safety concern that could lead to an accident or injury (Personal Safety Improvement)	5	X		
Fire Safety (5 ranking for essential systems that support Post-Fire Safe Shutdown and 3 ranking for non-essential fire systems)	5	X		
Regulatory Commitment	4	X		
Radiological Safety/ALARA	4	X		
Reactivity Management Event and Precursor	4	X		
Design Issue corrected to maintain full Qual.(Low PSA Significance)	2	X		
MATERIAL CONDITION IMPROVEMENTS	RANKING	MULTIPLIER	TOTAL	
Maintenance Rule (a)(1) Corrective Action	5	X		
System Health Red or Yellow Corrective Action "Road to Green"	5	X		
Root Cause CAPRS	5	X		
Obsolete Critical Equipment with No Spares	5	X		
Supports Critical Equipment PM	4	X		
Repeat Unexpected Corrective Maintenance	4	X		
Temporary Modification Change Closure	4	X		
Chronic Problem	4	X		
Operator Work Around / Challenges	4	X		
Program/Component Health Red or Yellow Corrective Action "Road to Green"	4	X		
Obsolete Critical Equipment with Spares	4	X		
Other Obsolete Equipment	3	X		
Security Equipment	3	X		
Supports Corrective Work Requests	3	X		
Rework Elimination	3	X		
Control Room Deficiencies	3	X		
Emergency Preparedness Improvements	3	X		
Control Room Distraction	2	X		
Others (i.e., Cost vs. Benefit)	1	X		
PRODUCTION(SHORT TERM)	RANKING	MULTIPLIER	TOTAL	
Forced outage reduction	5	X		
Prevent power reduction > 20%	5	X		
Improved thermal efficiency	4	X		
Reduced outage length	4	X		
Abandoned Equipment	2	X		
Others (i.e., Cost vs. Benefit)	1	X		
RANKING x MULTIPLIER = PHC Total Ranking Score: _____				
How long has this condition existed? _____ Years				
Is this a generic industry issue? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Is there an OE to reference _____				

Urgency Multiplier Table

Multiplier	Description
5	Short term implication or limited options that correct existing or imminent condition; threatens health or safety of the public / plant personnel; results in plant shutdown; or delays startup or return to service.
4	Aggressive completion necessary to prevent future condition, or hinders response to accident/transient. Add 0.2 for each additional applicable category: Operations Aggregate Index; Radiation Reduction; Obsolete Component, Deficiency Greater Than Two Years Old
3	Items which help to improve or maintain operation are economically justified but not urgent to resolve. Add 0.2 for each additional applicable category: Operations Aggregate Index; Radiation Reduction; Obsolete Component, Deficiency Greater Than Two Years Old
2	Management discretion items, which may include intangible benefits such as improvement in employee morale and plant appearance. Add 0.2 for each additional applicable category: Operations Aggregate Index; Radiation Reduction; Obsolete Component, Deficiency Greater Than Two Years Old
1	Items which could potentially add value but show little short-term benefit.

The Information Technology Project Review Committee uses a similar process that takes into account technology concerns and issues with the difficulty in implementing new software.

Projects may be re-ranked based on changes in plant conditions or station initiatives. When this happens, the project manager does an evaluation to determine the new ranking and takes it back to the PRC for approval of the revised ranking.

For funding purposes the ranking list is broken up into 4 sections based on the priority of the ranking criteria. A project that is ranked in the "Safety" category gets a sub-score of "4". Material Condition Improvements are broken up into a "3" and a "2", and Short Term Production issues are given a "1".

As an example, lets look at upgrades to the Reactor Manual Control System. We can no longer obtain parts and this system is critical to managing reactor power. This makes it a "Reactivity Management Event" issue since it deals with moving Control Rods. The issue isn't an immediate threat to reactor safety, but needs time to be corrected. The PM thinks we need to aggressively work on this issue.

$Reactivity\ Management\ Event = 4$
 $Aggressive\ Completion\ Needed = 4$
 $Safety\ Related\ Sub-rank = 4$

$Project\ ranking = 16 - 4$

FY11/FY12 Project Review Committee Preliminary Project List

Project	Title	Rank	FY11 (R20)			FY12				
			Phase	\$ENL	\$NENL	\$Total	Phase	\$ENL	\$NENL	\$Total
	Moveable Capital	25 - 5			1000	1,000.0			1000	1,000.0
	Downtown Building Upgrades	25 - 5			300	300.0			300	300.0
00595001	ISFSI Campaigns	25 - 4		360.0	175.0	535.0		200.0	3,980.0	4,180.0
00613001	Replace Main Transformer M4	25 - 3		100.0	100.0	200.0		100.0	150.0	250.0
01696201	Feedwater Heater Level Controller, Positioners, Transmitters	21 - 3	3	150.0	1,140.0	1,290.0				0.0
	493501 Replace Main Generator Rotor	20 - 4	3	100.0	6,000.0	6,100.0				0.0
00852501	PDIS System Replacement	20 - 4		175.0	225.0	400.0				0.0
01263501	CW-P-1A, 1B, 1C Remove, Replace, & Refurbish Pump	20 - 4	3	82.2	423.0	505.2	3	82.2	423.0	505.2
01264301	RFW-P-1A, 1B Remove, Replace, Refurbish Pump	20 - 4	3	1.0	1.0	2.0				0.0
01159401	COND-P-2A, 2B, 2C Remove, Replace, Refurbish pumps	20 - 4	3	22.0	200.5	222.5				0.0
00820801	Plant Fire Detection System Upgrade	20 - 4	3	61.1	2,019.2	2,080.3	3	75.2	1,660.4	1,735.6
00178801	Critical Spares	20 - 4	3	50.0	450.0	500.0				0.0
01164001	Modify NS4 Logic to Close MSIVs at Level 1	20 - 4	3	58.3	698.0	756.3				0.0
00920501	Yokagawa Recorders	20 - 3	3		139.0	139.0				0.0
01043401	Replace TR-N1	20 - 3	3	15.5	1,408.1	1,423.6				0.0
00166301	HPCS Voltage Regulator Replacement	20 - 3	3	0.0	250.0	250.0				0.0
00876901	HPCS Governor Replacement	20 - 3	3	0.0	65.0	65.0				0.0
18204301	On Line Noble Chem Application	16.8 - 3	3	20.0	3,870.0	3,890.0			400.0	400.0
01734101	Main Transformers Online Dissolved Gas Monitor	16.8 - 3	3	7.5	167.0	174.5	3	4.9	111.4	116.3
01613301	TSW Pump Swap Logic	16.8 - 3	2,3	16.0	66.0	82.0				0.0
00100101	CFD Filter Replacement	16 - 5		25.4	116.9	142.3		25.4	116.9	142.3
00100201	LPRM Procurement	16 - 5	3	181.8	900.0	1,081.8				0.0
00104201	Control Rod Blade Procurement	16 - 5	3	30.0	1,100.0	1,130.0				0.0
01264001	COND-M-P/1A, B, C Motor Remove, Replace, Refurbish	16 - 5	3	38.0	469.8	507.8				0.0
00119101	Replace Process Rad Monitors	16 - 4	3	26.0	300.0	326.0	3	29.4	184.0	213.4
00131401	Plant License Extension/Renewal	16 - 4	3	0.0	4,137.0	4,137.0	3	0.0	1,764.0	1,764.0
00448701	Scram Discharge Volume Instrument Mods.	16 - 4	3		1,000.0	1,000.0				0.0
01378501	Reactor Manual Control Syst Upgrade	16 - 4	1	75.0	150.0	225.0	2	150.0	2,500.0	2,650.0
00608601	Main Condenser Replacement	16 - 4	3	0.0	30,600.0	30,600.0		0.0	8,460.0	8,460.0
01096101	Upgrade transformer yard oil collection	16 - 4	3	70.0	494.0	564.0				0.0
01479301	Dose Reduction (Formerly Stellite Reduction Components)	16 - 4	3	300.0	900.0	1,200.0	3	50.0	250.0	300.0
00131701	Shield DW Travel Paths	16 - 4		149.6		149.6				0.0
00709201	Main Condenser Waterbox Drains on West Side	16 - 4	3	0	70.1	70.1				0.0
19203501	ECCS Strainers - GSI 191 Impact	16 - 4	3	146.0	512.0	658.0	3	41.6	2.4	44.0
17774501	LPCS-P-1 Remove, Replace, & Refurbish Pump	16 - 3	3	75.0	340.0	415.0				0.0
01177701	RHR-P-2A, 2B, 2C Remove, Replace, Refurbish Pump	16 - 3				0.0	3	75.0	340.0	415.0
01159301	COND-P-1A, 1B, 1C Remove, Replace, & Refurbish Pump	16 - 3	3	12.0	200.0	212.0				0.0
00332101	Digital Fault Recorder (Replaces Oscillograph)	16 - 3	3	9.6	65.0	74.6				0.0
00291401	Replace Seal Steam Pressure controllers	16 - 3	3		463.0	463.0				0.0
00482501	Replace Moisture Separator Reheater Tube Bundles	16 - 3	1	30.0	200.0	230.0	2	100.0	500.0	600.0
00612801	Replace Main Power Transformers	16 - 3	1	10.0	100.0	110.0	2	75.0	4,000.0	4,075.0
01264101	COND-M-P/2A, B, C Motor Remove, Replace, Refurbish (wa	16 - 3	3	41.2	229.0	270.2				0.0
00992101	Replace the CAS/SA Compressors	16 - 3	3	25.0	100.0	125.0	2	25.0	200.0	225.0
01206601	TSC Power Source (Management Discretion)	16 - 3		0.0	0.0	0.0	2	35.4	60.0	95.4
01286001	Install Permanent Platforms in Plant	16 - 3	3	25.0	762.5	787.5	3	25.0	762.5	787.5
01807901	Modify CW Piping to Support Draindown/Temp TSW	16 - 3		25.0	1,300.0	1,325.0				0.0
00365501	Stack Monitor Upgrade	16 - 3	2	63.8	404.7	468.5	3	54.5	538.6	593.1
00247901	Main Steam Pressure Switches are Obsolete	16 - 3	3		100.0	100.0				0.0
17795001	Replace DG 2 with Spare Generator	16 - 3	3	180.0	495.0	675.0				0.0
00574101	Replace the Main Generator Voltage Regulator	16 - 3	1	40.0		40.0	2	150.0	1,000.0	1,150.0
00156101	Removal of RSCS Rod Blocks from RMCS	16 - 3	3	10.0	53.0	63.0				0.0
00230101	Remote Vibration Monitoring Non-critical Fans	16 - 2				0.0	3	200.0	80.0	280.0
01264501	CW-M-P/1A, 1B, 1C Remove, Replace, & Refurbish Motor	16 - 3	3	122.0	264.0	386.0	3	122.0	264.0	386.0
00415501	RHR-M-P/2A, 2B, 2C Remove, Replace, Refurbish Motor	16 - 3	3	17.9	288.5	306.4				0.0
17739401	RCIC Turbine Speed Control Upgrade	16 - 3				0.0	2	59.2	125.0	184.2
01299401	Replacement of Whole Bodey Contamination Monitors	16 - 3	3	10.0	120.0	130.0	3	10.0	120.0	130.0
18528501	DEH Equipment Incentive Payment, Contract #320931	16 - 1				0.0	3		110.0	110.0
01200801	Replace Cooling Breakers on Transformers	16 - 1				0.0	2	56.0		56.0
00985101	Isolation Power Supply on Loss of RPS B	15 - 4				0.0	2	65.0		65.0
00229101	Rx Building 606' Office Structure	15 - 4	3	15.0	228.0	243.0				0.0
00185301	Keep-fill Pump Upgrades	15 - 3	3	89.0	417.0	506.0				0.0
00743501	Replace SW Chiller A Valves SW-V-822A/823A/224A	15 - 3	3	0.0	255.6	255.6				0.0
01071401	Upgrade Trip Logic for CBP Low Suction Pressure Trip	15 - 3	3	0.0	561.8	561.8		3	0.0	561.8
01072801	Upgrade trip logic RFT hi exh temp	15 - 3	3	6.4	336.9	343.3				0.0
00719201	Cooling Tower Fill Replacement	15 - 2		10.0	4,200.0	4,210.0				0.0
00278301	RHR-FCV-64A, B, C	15 - 1		0.0	0.0	0.0	2	90.0	0.0	90.0
00148501	Seal Oil Skid Filter Replacement	15 - 1	3		260.0	260.0				0.0
00614401	Evaporator Steam Supply Control	15 - 1	1	25.0		25.0	2	43.0		43.0
01709501	Retire/Replace TDAS and PPC	12.8 - 3	1		100.0	100.0	2		1,000.0	1,000.0
00985301	Replace REA-FN-1A Online Modifications	12.8 - 1	3	0.0	71.0	71.0				0.0
00128301	Install RFT BS Low point drain	12 - 3	3	42.4	8.0	50.4				0.0

Currently above budget cut-line for execution in FY11 and/or FY12

Below this point projects will be moved to next available slot for planning/execution

Project lists are for **EXAMPLE ONLY** and may differ from the approved project lists.

Legend	
\$ENL-	Internal Labor
\$NENL-	Non Labor Costs
Phase-	Scope/Design or Installation

FY11/FY12 Project Review Committee Preliminary Project List

Project	Title	Rank	FY11 (R20)			FY12				
			Phase	\$ENL	\$NENL	\$Total	Phase	\$ENL	\$NENL	\$Total
00165301	Vibration Instrumentation for TG and RFW Obsolete	12 - 3	3	8.8	407.2	416.0				0.0
00263801	Replace Pneumatic Relays	12 - 3	3	25.2	16.6	41.8				0.0
00301701	Replace Gen RF Monitor	12 - 3	3	12.0	70.0	82.0				0.0
00533101	Main Generator Lead Box Seal Repair	12 - 3	3	20.0	300.0	320.0				0.0
00804401	Seismic System Replacement	12 - 3	3	50.0	230.0	280.0				0.0
00908001	Replace TSW-PC-20 - Design Only	12 - 3	2	1.8	12.0	13.8				0.0
00953401	Install Pole-top Disconnects for E-TR-B (Safety)	12 - 3	2,3	59.4	87.9	147.3				0.0
00966401	Differential Protection to Distribution Transformers	12 - 3	1	6.0	0.0	6.0	2	30.0	55.0	85.0
01641101	FPC-CP-1 Upgrade Timers and Controllers	12 - 3		0.0	0.0	0.0		93.0	0.0	93.0
00124501	Replace Heat Exchanger RCC-HX-1A,B,C	12 - 2		0.0	0.0	0.0	2	15.0	80.0	95.0
00572701	HD Tank Discharge Pipe Support Design	12 - 2		0.0	0.0	0.0	2	25.0	100.0	125.0
00792301	Replace ASD Fortress Display - Design Only	12 - 2		0.0	0.0	0.0	2	50.0	0.0	50.0
18097901	MT-CRA-2 Load Cell Displays	11 - 4					2	64.0		64.0
01071801	Upgrade failure logic on AR-V-1 to reduce SPV potential	10 - 1				0.0	3	72.0	50.0	122.0
01043701	Replace SW Piping Downstream SW-RO-2A	9 - 2	3	6.4	139	145.4		0.0	0.0	0.0
00628701	SRM/IRM Replacement	9 - 2		0.0		0.0	2	50.0	360.0	410.0
01691401	Digital Backbone for Power Block	09 - 2			0.0	0.0	1	10.0	150.0	160.0
00847201	Install Voltage and Frequency Transducers on 115V and 230V	08 - 3	3	48.0	5.0	53.0			0.0	0.0
00848601	E-GEN-1 Install Torsional Vibration Monitoring Equipment	08 - 3		0.0	0.0	0.0	2	32.0	0.0	32.0
01710201	Replace RRC-FT-14A-D & 24A-D	06 - 2	2	16.0	80.0	96.0	3	15.2	40.0	55.2
00705201	E-EXC-1, Replace Main Generator Exciter	PHC	1	50.0	0.0	50.0	2	150.0	3,000.0	3,150.0
00909701	E-GEN-1, Replace Main Generator Lead Bushings	PHC	1	50.0		50.0	2	50.0	150.0	200.0
01264901	LPCS-M-P/1 Remove, Replace, & Refurbish Motor	16 - 3	3	17.9	288.5	306.4				0.0
01403601	Replace Transformer TR-N2	PHC		0.0	0.0	0.0	1	15.0	75.0	90.0
01678001	Replace Transformer TR-S	PHC				0.0	1	15.0	75.0	90.0
01544601	TIP System Upgrade	PHC	1	30.0		30.0	2	100.0		100.0
01794101	Chemistry Lab Upgrades	PHC	1	100.0	0.0	100.0	2	100.0	650.0	750.0
01795801	Adopt NFPA 805	PHC		0.0	0.0	0.0	3	300.0	1,000.0	1,300.0
01792801	SCC Upgrade/Refurb	PHC	3	20.0	55.0	75.0				0.0
17633001	Replace Video Capture	PHC				0.0	2	48.0		48.0
	Capital Budgets (w/o Condenser funding)					43,151.0				22,150.0
	Capital Budget (including Condenser project)					73,751.0				30,750.0
	Capital Totals (includes Condenser project)			3,666.2	73,060.8	76,727.0		3,181.0	36,187.2	39,927.0

Project lists are for **EXAMPLE ONLY** and may differ from the approved project lists.

Projects waiting for priority ranking by the approval committees. These may move up the list based on their importance to the station, or they may be assigned to future fiscal years.

The overall goal of the station is to discover as much as possible about what needs to be done; make reasonable decisions about how soon the problems need to be addressed, and take into account our ability to complete the work safely, on time and within budget. With the conclusion of refueling outage 21 in FY13, all of the critical pumps and motors will have been replaced or refurbished to new condition. We anticipate having major pump and motor work every 15-20 years based on current industry experience. This means that beginning sometime around FY19 or FY20, we will see a budget increase to accommodate another round of motor and pump work. Good long-range planning should allow us to coordinate this work to ensure a minimal impact on the station's budget.

Equipment obsolescence is probably the other big issue. Most of the technology used in the plant was conceived in the late 1970s. Many of the original vendors of plant equipment no longer exist, or no longer manufacture parts and supplies. As we continue to operate, systems will need to be replaced as they reach the end of their useful lives. Where possible, we will anticipate and carefully plan for these upgrades in an effort to mitigate associated costs.

FY11/FY12 Project Review Committee Preliminary Project

Project	Title	Rank	FY11 (R20)			FY12				
			Phase	\$ENL	\$NENL	\$Total	Phase	\$ENL	\$NENL	\$Total
01302401	Minor Mods (formerly Quick Kills)	25 - 5	3		350.0	350.0	3		350.0	350.0
00246501	Vessel Services	25 - 5	3	150.0	6,100.0	6,250.0	2	50.0	215.0	265.0
01356601	Outage Temp Power	25 - 5		100.0	1,100.0	1,200.0				0.0
18267801	Painting and Upkeep	25 - 5		60.0	140.0	200.0		60.0	140.0	200.0
01833701	Landfill 618-11 Remediation Support	20 - 4		59.5	10.0	69.5				0.0
00103501	Emergency Diesel Generator Maint (DG-1/DG-2/DG-3)	20 - 4	3	15.0	140.0	155.0	2	260	385	645.0
00104101	Main Generator Maintenance	20 - 4	3	450.0	3,000.0	3,450.0	2	12	18.7	30.7
00101401	Snubber Testing/Inspection	20 - 4	3	45.0	219.0	264.0		10.0		10.0
01440101	Complete Elect Wiring Diagram Drawings	20 - 4	3	124.8	936.2	1,061.0	3	124.8	936.2	1,061.0
00595002	ISFSI Campaigns	20 - 4		0.0	165.0	165.0		0.0	165.0	165.0
00718501	RCS Chemical Decontamination	20 - 4	3	175.0	5,100.0	5,275.0				0.0
01201501	Dryer Regen Skid Removal	17.6-3	1	32.0	125.0	157.0	2			
01592501	Turbine Building Outage Facility	16.8-3			119.3	119.3			141.0	141.0
00791201	Control Room Emergency Chiller Deactivation	16.8-3	2	75.0	0.0	75.0	3	26.0	5.0	31.0
00100801	HCU Maintenance	16 - 5	3	1,251.0	0.0	1,251.0				0.0
00100901	FW HTR Eddy Current Support	16 - 5	3	19.0	345.0	364.0	2	10.0	210.0	220.0
00101001	MOV Maintenance & Testing	16 - 5	3	100.0	150.0	250.0	2	5.0	280.0	285.0
00101101	Inspect Heat Exchangers	16 - 5	3	42.8	168.7	211.5				0.0
00101201	CRD Repair/Refurbish	16 - 5	3	50.0	1,210.0	1,260.0				0.0
00101301	Relief Valve Rebuild-Testing	16 - 5	3	10.0	304.0	314.0		1.0	25.5	26.5
00101501	Inspect TV/GV/RSVs/IV	16 - 5	3	165.0	2,435.0	2,600.0	3	0.0	0.0	0.0
00101601	ISI/NDE	16 - 5	3	370.3	4,349.0	4,719.3	2	370.3	223.0	593.3
00101701	Annual Transformer Yard	16 - 5	3	28.8	1,265.0	1,293.8	2	41.7	88.6	130.3
00101801	FAC Pipe Min. Wall Inspection	16 - 5	3	400.0	1,500.0	1,900.0	2	155	100	255.0
00102101	MSR Inspection/Test	16 - 5	3	50.0	700.0	750.0				0.0
00102201	Condenser Eddy Current Support	16 - 5	3	75.0	975.0	1,050.0				0.0
00102301	Bypass Valve Inspection	16 - 5	3	50.0	650.0	700.0	2	0.0	0.0	0.0
00102401	Wetwell Inspection- Cleaning	16 - 5	3	10.0	100.0	110.0				0.0
00102501	Plant HVAC Program	16 - 5	3	262.0	88.0	350.0	2	115	40	155.0
00102701	Test, Replace & Rebuild MSRVs	16 - 5	3	12.0	600.0	612.0				0.0
00102901	Main Turbine Inspection	16 - 5	3	600.0	3,450.0	4,050.0	2	0	0	0.0
00103401	Eddy Current Test Ht Exch	16 - 5	3	196.4	531.0	727.4	2	148.9	62.5	211.4
00103901	Clg Twr & CW Prevent Maint	16 - 5	3	388.5	669.3	1,057.8	2	70.1	177.6	247.7
00529901	BOP Valve Inspection and Repair	16 - 5	3	50.0	4,968.2	5,018.2	2	19.0	259.0	278.0
00103301	Enhanced AOV Program	16 - 4	3	20.7	160.0	180.7	2	1.8	200	201.8
00128701	Disassemble and Inspect MSIVs	16 - 4		154.1	1,580.7	1,734.8				0.0
01771501	Buried Piping Integrity Program	16 - 4		50.0	82.0	132.0		50.0	162.0	212.0
01479302	Dose Reduction (Formerly Stellite Reduction Compone	16 - 4	3	0.0	300.0	300.0	3	100.0	100.0	200.0
01519001	Decontaminate Scaffolding	16 - 4			200.0	200.0			200.0	200.0
00288701	Overhaul TR-M1, 2, 3, 4	16 - 3				0.0	3	35.4	448.3	483.7
01225001	RRC-VMP-1 Upgrade	16 - 3				0.0				0.0
01318401	Protective Coatings	16 - 3		12	135	147.0		12	60	72.0
00873901	CRA-FN-4A/4B Fuses and Overloads (also AR8744)	16 - 3	3	0.0	0.0	0.0	2	34.0		34.0
01821101	Clean COND-HX-7	16 - 3	2	24.0		24.0				0.0
00102801	Check Valve Reliability	15 - 3	3	32.0	1,285.0	1,317.0	2	23.7	128.6	152.3
00924801	Alternate Decay Heat Removal System	15 - 3	3	300.0	2,500.0	2,800.0	3	300.0	4,000.0	4,300.0
00781401	PSA Upgrade-Scope & Capability	15 - 2		295.2	426.0	721.2				0.0
00451101	Resolve Design Deficiencies with Circuit Breaker Coord	15 - 1	3	10.0	50.0	60.0				0.0
01081501	PER 204-1269, Evaluate Vendor Recommended shaft	15 - 1	3	3.1	81.6	84.7				0.0
01184801	DG3 Minimum Voltage Permissive	12.8 - 3				0.0	2	84.0		84.0
18581701	PWC-TK-1 Interior Coatings Repair	12.8 - 3		0.0	0.0	0.0	3	0.0	150.0	150.0
00419601	Replace/Relocated RFT-CP-TTE1A	12 - 4	3	10.8	20.0	30.8				0.0
00623201	DG1 and DG2 K2 Relays	12 - 3				0.0	2	43.2		43.2
00687901	Manway for ROA-V-1	12 - 3	3	18.0	7.0	25.0				0.0
00822901	Margin Restoration on RCC-V-40	12 - 3	3	36.0	20.0	56.0				0.0
01327301	Install Main Generator Air Test Referenced Chamber	09 - 2	3		12.0	12.0				0.0
00970101	Bypass switch for SOP-RHR-SDC-BYPASS	08 - 3				0.0	3	32.0	16.0	48.0
00773201	Deactivate COND-V-79/80 A/B/C/D/E/F	06 - 3				0.0	3	3.2	6.2	9.4
	O&M Totals			6,383.0	48,822.0	55,205.0		2,198.1	9,293.2	11,491.3
	O&M Budgets					46,734.0				13,500.0

These FY11 projects are below the approved budget line and may not get done. In FY10, all of the FY11 major maintenance projects will have their budgets challenged in an attempt to reduce

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Legend
\$ENL- Internal Labor
\$NENL- Non Labor Costs
Phase- Scope/Design or Installation

Proposed Significant Outage Projects

FY10	FY11	FY12	FY13	FY14	FY15	
<p>Projects</p> <ul style="list-style-type: none"> Generator Rotor Replacement Plant License Extension/Renewal Keep-fill Pump Upgrades Main Condenser Replacement Cooling Tower Fill Replacement Plant Fire Detection System Upgrade PDIS System Replacement CW-P-1A, 1B, 1C Remove, Replace, & Refurbish Pump Dose Reduction (Stellite Reduction Components) Simulator I/O Hardware Upgrade Feedwater Heater Level Controller, Positioners, Transmitters On Line Noble Chem Application RCS Chemical Decontamination Emergency Diesel Generator Maint (DG-1/DG-2/DG-3) Spent Fuel Pool Cleanup PSA Upgrade-Scope & Capability Alternate Decay Heat Removal System Complete Elect Wiring Diagram Drawings Turbine Building Outage Power <p>Information Technology Projects</p> <ul style="list-style-type: none"> Cyber Security Radio Obsolescence Horn Rapids Sirens PassPort Upgrade 		<p>Projects</p> <ul style="list-style-type: none"> ISFSI Expansion (Pad & Security) CW-P-1X Remove, Replace, & Refurbish Pump Plant Fire Detection System Upgrade Plant License Extension/Renewal Replace Moisture Separator Reheater Tube Bundles Replace the Main Generator Voltage Regulator Retire/Replace TDAS and PPC E-EXC-1, Replace Main Generator Exciter Chemistry Lab Upgrades Perimeter Security Upgrade – remote cameras Upgrade CAS Equipment Upgrade SCC Equipment HP Remote Monitoring <p>Information Technology Projects</p> <ul style="list-style-type: none"> PeopleSoft Financials Upgrade eSOMS Life Cycle Maintenance Video Capture System Plant Logging System Replacement Workstation Upgrade/Replacement 		<p>Projects</p> <ul style="list-style-type: none"> Replace Main Power Transformer (1 of 4) Replace Reactor Manual Control System Replace SRM/IRM Instruments TMU-P-1A (Repair/Refurbish) FP-P-2A (Repair/Refurbish Pump) MCR Halon Suppressing System TSW Small Bore Piping Replacement Replace BRE Cameras SW-P-1B Pump Overhaul FP-P-2A Pump Overhaul TMU-P-1A Pump Overhaul <p>Information Technology Projects</p> <ul style="list-style-type: none"> Primavera Lifecycle Upgrade PeopleSoft HCM Upgrade Proximity Card System Upgrade Network Infrastructure Upgrade 		
		R-20		R-21	R-22	

Proposed Significant Outage Projects

FY16	FY17	FY18	FY19
<p>Projects Rewind Main Generator Replace Main Power Transformer (2 of 4) Replace TSW Heat Exchangers Replace Area Radiation Monitoring Replace Diesel Generator Speed Governors HPCS-P-2 Refurbish Pump COND-P-1A Refurbish Pump & Motor COND-P-2A Refurbish Pump & Motor</p> <p>Information Technology Projects eSOMS Lifecycle Upgrade Security Radios PassPort Upgrade SharePoint Lifecycle Management</p>		<p>Projects Meteorological Towers/Monitoring System CW-P-1B Pump Overhaul TMU-P-1C Pump Overhaul CRD-P-1B Motor Overhaul</p> <p>Information Technology Projects Telecom Infrastructure Workstation Upgrades PeopleSoft Financials Upgrade IT Infrastructure Upgrade HP Access Control Upgrade</p>	
R-22	R-23	R-24	