

## Capital Program Approval Requisition One Page Summary

<b>Company:</b>	AEP SYSTEM	<b>Version: 4</b>																																																																																																																																																																																				
<b>Project:</b>	HAVDATCTR - High Availability Data Center - - Revision																																																																																																																																																																																					
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																																																																																																																																																																					
<b>Description:</b>	<p>In order to support AEP's corporate decision to build one new Tier III data center in the greater Columbus region, the Information Technology Department shall initiate a planning phase project. The scope of this project sponsored by the Operational Reliability Team includes requirements and design work for the components within the new data center for IT telecommunications, infrastructure, cyber security and business critical applications. In addition, strategic and technical professional services partners shall be engaged to provide engineering and design input to this effort. This effort also has in scope the planning for the second data center building in order to position AEP for complete application failover. The redesign is required in order to have reliability of business operations, and reengineering is required in order to take advantage of the new functionality of running within the new data center. The new data center model requires the applications to be changed in order to run in 'high availability' mode; applications will be available immediately in the second data center in the event of a loss of operations at the primary data center with no loss of processing capability or data. This is done without any service disruptions to the customers or business partners.</p> <p>The plan phase also includes the planned purchase of the telecommunications assets, which are required during the building of the data center. O&amp;M activities include evaluating a hybrid cloud solution as a solution component. The project team shall submit a CI revision once the plan phase is complete with the full project cost and executable schedule. The full project cost is expected to range between \$75M - \$150M. The majority of the equipment in the new data center will be leased; a Lease Improvement Requisition shall be submitted during the 3rd Quarter 2014.</p>																																																																																																																																																																																					
<b>Revision Reason:</b>	This revision adds projects/components to capture additional companies to correct billing issues. There is no change to the total cost or scope.																																																																																																																																																																																					
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 20%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 20%;">Previously Approved Amount</th> <th style="width: 20%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr><td>AEG</td><td>APP_SYS_SW</td><td>\$56,974</td><td>\$0</td><td>\$56,974</td></tr> <tr><td>AEPCI</td><td>APP_SYS_SW</td><td>\$168,073</td><td>\$0</td><td>\$168,073</td></tr> <tr><td>AEPCO</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPES</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPINV</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPPRO</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPRES</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPSC</td><td>APP_SYS_SW</td><td>\$29,623,111</td><td>\$0</td><td>\$29,623,111</td></tr> <tr><td>AEPTD</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPUI</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>AEPWIN</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>APCO</td><td>APP_SYS_SW</td><td>\$5,780,347</td><td>\$0</td><td>\$5,780,347</td></tr> <tr><td>APTC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>BPCO</td><td>APP_SYS_SW</td><td>\$0</td><td>\$258,283</td><td>\$258,283</td></tr> <tr><td>CD</td><td>APP_SYS_SW</td><td>\$387,423</td><td>-\$387,423</td><td>\$0</td></tr> <tr><td>CSWEGY</td><td>APP_SYS_SW</td><td>\$467,186</td><td>\$0</td><td>\$467,186</td></tr> <tr><td>ETT</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>GENCO</td><td>APP_SYS_SW</td><td>\$1,364,497</td><td>\$129,140</td><td>\$1,493,637</td></tr> <tr><td>IMPCO</td><td>APP_SYS_SW</td><td>\$8,778,487</td><td>\$0</td><td>\$8,778,487</td></tr> <tr><td>IMTC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>KGPCO</td><td>APP_SYS_SW</td><td>\$212,554</td><td>\$0</td><td>\$212,554</td></tr> <tr><td>KYPCO</td><td>APP_SYS_SW</td><td>\$1,827,350</td><td>\$0</td><td>\$1,827,350</td></tr> <tr><td>KYTC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>OHPCO</td><td>APP_SYS_SW</td><td>\$6,197,857</td><td>\$0</td><td>\$6,197,857</td></tr> <tr><td>OHTC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>OKTC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>PSO</td><td>APP_SYS_SW</td><td>\$3,851,910</td><td>\$0</td><td>\$3,851,910</td></tr> <tr><td>SWEPCO</td><td>APP_SYS_SW</td><td>\$4,299,174</td><td>\$0</td><td>\$4,299,174</td></tr> <tr><td>TCC</td><td>APP_SYS_SW</td><td>\$4,231,172</td><td>\$0</td><td>\$4,231,172</td></tr> <tr><td>TNC</td><td>APP_SYS_SW</td><td>\$1,361,208</td><td>\$0</td><td>\$1,361,208</td></tr> <tr><td>TRSRC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>USTI</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr><td>WPCO</td><td>APP_SYS_SW</td><td>\$205,542</td><td>\$0</td><td>\$205,542</td></tr> <tr><td>WVTC</td><td>APP_SYS_SW</td><td>\$0</td><td>\$0</td><td>\$0</td></tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td><td><b>\$68,812,867</b></td><td><b>\$0</b></td><td><b>\$68,812,867</b></td></tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEG	APP_SYS_SW	\$56,974	\$0	\$56,974	AEPCI	APP_SYS_SW	\$168,073	\$0	\$168,073	AEPCO	APP_SYS_SW	\$0	\$0	\$0	AEPES	APP_SYS_SW	\$0	\$0	\$0	AEPINV	APP_SYS_SW	\$0	\$0	\$0	AEPPRO	APP_SYS_SW	\$0	\$0	\$0	AEPRES	APP_SYS_SW	\$0	\$0	\$0	AEPSC	APP_SYS_SW	\$29,623,111	\$0	\$29,623,111	AEPTD	APP_SYS_SW	\$0	\$0	\$0	AEPUI	APP_SYS_SW	\$0	\$0	\$0	AEPWIN	APP_SYS_SW	\$0	\$0	\$0	APCO	APP_SYS_SW	\$5,780,347	\$0	\$5,780,347	APTC	APP_SYS_SW	\$0	\$0	\$0	BPCO	APP_SYS_SW	\$0	\$258,283	\$258,283	CD	APP_SYS_SW	\$387,423	-\$387,423	\$0	CSWEGY	APP_SYS_SW	\$467,186	\$0	\$467,186	ETT	APP_SYS_SW	\$0	\$0	\$0	GENCO	APP_SYS_SW	\$1,364,497	\$129,140	\$1,493,637	IMPCO	APP_SYS_SW	\$8,778,487	\$0	\$8,778,487	IMTC	APP_SYS_SW	\$0	\$0	\$0	KGPCO	APP_SYS_SW	\$212,554	\$0	\$212,554	KYPCO	APP_SYS_SW	\$1,827,350	\$0	\$1,827,350	KYTC	APP_SYS_SW	\$0	\$0	\$0	OHPCO	APP_SYS_SW	\$6,197,857	\$0	\$6,197,857	OHTC	APP_SYS_SW	\$0	\$0	\$0	OKTC	APP_SYS_SW	\$0	\$0	\$0	PSO	APP_SYS_SW	\$3,851,910	\$0	\$3,851,910	SWEPCO	APP_SYS_SW	\$4,299,174	\$0	\$4,299,174	TCC	APP_SYS_SW	\$4,231,172	\$0	\$4,231,172	TNC	APP_SYS_SW	\$1,361,208	\$0	\$1,361,208	TRSRC	APP_SYS_SW	\$0	\$0	\$0	USTI	APP_SYS_SW	\$0	\$0	\$0	WPCO	APP_SYS_SW	\$205,542	\$0	\$205,542	WVTC	APP_SYS_SW	\$0	\$0	\$0	<b>Total</b>		<b>\$68,812,867</b>	<b>\$0</b>	<b>\$68,812,867</b>
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Cash Flow:	Prior Years	1901	1902	Future Years	Total
	Capital	\$0	\$0	\$0	\$68,812,867
Removal	\$0	\$0	\$0	\$0	\$0
<b>Total To Be Authorized</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$68,812,867</b>	<b>\$68,812,867</b>
Less CIAC	\$0	\$0	\$0	\$0	\$0
Net AEP Cash Flow	\$0	\$0	\$0	\$68,812,867	\$68,812,867
Associated O&M	\$0	\$0	\$0	\$56,006,213	\$56,006,213
<b>Project Dates:</b>	<b>Start Date : 06/01/2014</b>		<b>In Service Date : 12/31/2016</b>		<b>Completion Date: 12/31/2016</b>
<b>Regulatory Cost Recovery:</b>	AEP System - \$69.6M (100%) Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.				
<b>Funding:</b>	<b>Included in IRC Presentation : Yes</b>		<b>Project Funded : Yes</b>		
<b>Approved By :</b>			<b>Approved On : 01/23/2015</b>		

## Capital Program Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>1901</b>	<b>1902</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$5,137,678	\$60,544,814	\$0	\$0	\$65,682,492
	Offsets Required	-\$5,137,678	-\$60,544,814	\$0	\$65,682,492	\$0
	<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$65,682,492</b>	<b>\$65,682,492</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Alesia A Austin	01/23/2015

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	PARKER, MARIE
		Project Manager	HEABERLIN, RICKY J

## Capital Program Approval Requisition

### Component CI's

Component ID	Company	Description of Work	Previously Approved (\$)		This Submission (\$)		Total Authorized (\$)		
			Capital	Removal	Capital	Removal	Capital	Removal	Total
IT1531323	AEG	High Avail Data Ctr-AEG	0	0	0	0	0	0	0
IT2701323	AEG	High Avail Data Ctr-CCT	56,974	0	0	0	56,974	0	56,974
IT3751323	AEG	High Avail Data Ctr-AEG Law	0	0	0	0	0	0	0
<b>AEG Total :</b>			<b>56,974</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>56,974</b>	<b>0</b>	<b>56,974</b>
IT2031323	AEPCI	High Avail Data Ctr-C&I	168,073	0	0	0	168,073	0	168,073
<b>AEPCI Total :</b>			<b>168,073</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>168,073</b>	<b>0</b>	<b>168,073</b>
IT1001323	AEPCO	High Avail Data Ctr-AEP Inc	0	0	0	0	0	0	0
<b>AEPCO Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1851323	AEPEP	High Avail Data Ctr-AEPEP	0	0	0	0	0	0	0
<b>AEPEP Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1961323	AEPINV	High Avail Data Ctr-AEP Inv	0	0	0	0	0	0	0
<b>AEPINV Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1431323	AEPPRO	High Avail Data Ctr-Pro Serv	0	0	0	0	0	0	0
<b>AEPPRO Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1721323	AEPRES	High Avail Data Ctr-AEP Res	0	0	0	0	0	0	0
<b>AEPRES Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
ITSSV1323	AEPSC	High Avail Data Ctr Planning	29,623,111	0	0	0	29,623,111	0	29,623,111
<b>AEPSC Total :</b>			<b>29,623,111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>29,623,111</b>	<b>0</b>	<b>29,623,111</b>
IT2041323	AEPTD	High Avail Data Ctr-T&D Serv	0	0	0	0	0	0	0
<b>AEPTD Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1011323	AEPUI	High Avail Data Ctr-AEP Utilit	0	0	0	0	0	0	0
<b>AEPUI Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT3451323	AEPWIN	Cont Avail Data Ctr-Wind	0	0	0	0	0	0	0
<b>AEPWIN Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1501323	APCO	High Avail Data Ctr-AP-T	91,981	0	0	0	91,981	0	91,981
IT1401323	APCO	High Avail Data Ctr-AP-D	3,697,297	0	0	0	3,697,297	0	3,697,297
IT2151323	APCO	High Avail Data Ctr-AP-G	1,991,069	0	0	0	1,991,069	0	1,991,069
<b>APCO Total :</b>			<b>5,780,347</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,780,347</b>	<b>0</b>	<b>5,780,347</b>
IT3821323	APTC	High Avail Data Ctr-AP Transco	0	0	0	0	0	0	0
<b>APTC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT0341323	BPCO	High Avail Data Ctr-CardinalBP	0	0	258,283	0	258,283	0	258,283
<b>BPCO Total :</b>			<b>0</b>	<b>0</b>	<b>258,283</b>	<b>0</b>	<b>258,283</b>	<b>0</b>	<b>258,283</b>
IT1041323	CD	High Avail Data Ctr-Cardinal	387,423	0	-387,423	0	0	0	0
<b>CD Total :</b>			<b>387,423</b>	<b>0</b>	<b>-387,423</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1711323	CSWEGY	High Avail Data Ctr-CSW Energy	467,186	0	0	0	467,186	0	467,186
<b>CSWEGY Total :</b>			<b>467,186</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>467,186</b>	<b>0</b>	<b>467,186</b>
IT3741323	ETT	High Avail Data Ctr-ETTX	0	0	0	0	0	0	0



<b>ETT Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1811323	GENCO	High Avail Data Ctr-AEP Gen Re	1,364,497	0	129,140	0	1,493,637	0	1,493,637
<b>GENCO Total :</b>			<b>1,364,497</b>	<b>0</b>	<b>129,140</b>	<b>0</b>	<b>1,493,637</b>	<b>0</b>	<b>1,493,637</b>
IT2801323	IMPCO	High Avail Data Ctr-IM River	65,520	0	0	0	65,520	0	65,520
IT1901323	IMPCO	High Avail Data Ctr-IM-Nuc	4,829,111	0	0	0	4,829,111	0	4,829,111
IT1201323	IMPCO	High Avail Data Ctr-IM-T	368,125	0	0	0	368,125	0	368,125
IT1321323	IMPCO	High Avail Data Ctr-IM-G	853,250	0	0	0	853,250	0	853,250
IT1701323	IMPCO	High Avail Data Ctr-IM-D	2,662,481	0	0	0	2,662,481	0	2,662,481
<b>IMPCO Total :</b>			<b>8,778,487</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,778,487</b>	<b>0</b>	<b>8,778,487</b>
IT3851323	IMTC	High Avail Data Ctr-IM Transco	0	0	0	0	0	0	0
<b>IMTC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT2601323	KGPCO	High Avail Data Ctr-KGP-T	5,669	0	0	0	5,669	0	5,669
IT2301323	KGPCO	High Avail Data Ctr-KGP-D	206,885	0	0	0	206,885	0	206,885
<b>KGPCO Total :</b>			<b>212,554</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>212,554</b>	<b>0</b>	<b>212,554</b>
IT1171323	KYPCO	High Avail Data Ctr-KYP-G	780,313	0	0	0	780,313	0	780,313
IT1801323	KYPCO	High Avail Data Ctr-KYP-T	79,452	0	0	0	79,452	0	79,452
IT1101323	KYPCO	High Avail Data Ctr-KYP-D	967,586	0	0	0	967,586	0	967,586
<b>KYPCO Total :</b>			<b>1,827,350</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,827,350</b>	<b>0</b>	<b>1,827,350</b>
IT3841323	KYTC	High Avail Data Ctr-KY Transco	0	0	0	0	0	0	0
<b>KYTC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT2501323	OHPCO	High Avail Data Ctr-OP-D	6,157,554	0	0	0	6,157,554	0	6,157,554
IT1601323	OHPCO	High Avail Data Ctr-OP-T	40,303	0	0	0	40,303	0	40,303
<b>OHPCO Total :</b>			<b>6,197,857</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6,197,857</b>	<b>0</b>	<b>6,197,857</b>
IT3801323	OHTC	High Avail Data Ctr-OH Transco	0	0	0	0	0	0	0
<b>OHTC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT3861323	OKTC	High Avail Data Ctr-OK Transco	0	0	0	0	0	0	0
<b>OKTC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT1671323	PSO	High Avail Data Ctr-PSO-D	2,676,215	0	0	0	2,676,215	0	2,676,215
IT1981323	PSO	High Avail Data Ctr-PSO-G	899,737	0	0	0	899,737	0	899,737
IT1141323	PSO	High Avail Data Ctr-PSO-T	275,958	0	0	0	275,958	0	275,958
<b>PSO Total :</b>			<b>3,851,910</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,851,910</b>	<b>0</b>	<b>3,851,910</b>
IT1591323	SWEPCO	High Avail Data Ctr-SEP-D	1,781,834	0	0	0	1,781,834	0	1,781,834
IT1611323	SWEPCO	High Avail Data Ctr-SEPT-D	846,289	0	0	0	846,289	0	846,289
IT1681323	SWEPCO	High Avail Data Ctr-SEP-G	1,386,073	0	0	0	1,386,073	0	1,386,073
IT1941323	SWEPCO	High Avail Data Ctr-SEP-T	284,978	0	0	0	284,978	0	284,978
IT1111323	SWEPCO	High Avail Data Ctr-SEPT-T	0	0	0	0	0	0	0
<b>SWEPCO Total :</b>			<b>4,299,174</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,299,174</b>	<b>0</b>	<b>4,299,174</b>
IT1691323	TCC	High Avail Data Ctr-TC-T	390,048	0	0	0	390,048	0	390,048
IT2111323	TCC	High Avail Data Ctr-TC-D	3,841,125	0	0	0	3,841,125	0	3,841,125
<b>TCC Total :</b>			<b>4,231,172</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,231,172</b>	<b>0</b>	<b>4,231,172</b>
IT1191323	TNC	High Avail Data Ctr-TN-D	1,155,050	0	0	0	1,155,050	0	1,155,050
IT1661323	TNC	High Avail Data	0	0	0	0	0	0	0

		Ctr-TN-G							
IT1921323	TNC	High Avail Data Ctr-TN-T	206,158	0	0	0	206,158	0	206,158
<b>TNC Total :</b>			<b>1,361,208</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,361,208</b>	<b>0</b>	<b>1,361,208</b>
IT4071323	TRSRC	Cont Avail Data Ctr-Transrc MO	0	0	0	0	0	0	0
<b>TRSRC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT3191323	USTI	High Avail Data Ctr-USTI	0	0	0	0	0	0	0
<b>USTI Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT2101323	WPCO	High Avail Data Ctr-WP-D	205,542	0	0	0	205,542	0	205,542
IT2001323	WPCO	High Avail Data Ctr-WP-T	0	0	0	0	0	0	0
<b>WPCO Total :</b>			<b>205,542</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>205,542</b>	<b>0</b>	<b>205,542</b>
IT3831323	WVTC	High Avail Data Ctr-WV Transco	0	0	0	0	0	0	0
<b>WVTC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Grand Total :</b>			<b>68,812,867</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>68,812,867</b>	<b>0</b>	<b>68,812,867</b>

## Capital Program Approval Requisition

### Additional Information

<p><b>Project Justification:</b></p>	<ul style="list-style-type: none"> <li>• Most of AEP's systems and applications are designed to failover seamlessly within a single data center, but not across data centers (1RP and Roanoke). This leaves AEP exposed by critical applications not being available if the primary data center has a malfunction.</li> <li>• AEP's existing data recovery plan does not address mitigating minor business interruptions or failover of a subset of applications - only catastrophic complete losses.</li> <li>• As a result of the February 28 event, there is a sense of urgency to reduce the operational risk of the critical business functions in the existing AEP 1 Riverside Plaza data center. AEP's data center closely matches the definition of a Tier 1 data center, due to single point vulnerabilities of a single backup generator and a single network connection.</li> <li>• Under the high availability concept, mission-critical applications, storage, and databases will be modified to allow for continuous operation from either the primary or secondary data center, as needed. This will ensure that critical applications will always be available, even if there's an outage at the primary data center.</li> <li>• By implementing high availability in a new Tier III data center, we will be able achieve the following benefits:             <ol style="list-style-type: none"> <li>1. Remove the facility risk of the Tier 1 facility, multiple single points of failure, elevated natural and man-made risks, and physical footprint constraints</li> <li>2. Allow planned maintenance to technical environment without impacting operations</li> <li>3. Reduce risk of failover in a disaster recovery incident</li> <li>4. Sustain our cyber security monitoring by having cyber tools and monitoring available, even during an outage</li> <li>5. Avoid the negative publicity due to the perception of unreliable and ineffective operations of a Fortune 200 company's loss of data center operations</li> </ol> </li> </ul>
<p><b>Other Alternatives Considered:</b></p>	<p>One alternative is to fix basic issues in the single, existing regional data center at 1 Riverside Plaza, instead of the new data center. Although this option has provided stability since 1983, the remaining risks are ones that cannot be corrected to a data center beyond the basic, most risk Tier I data such as: no high availability for critical applications; location constraints (river, train and federal building close by); multiple single points of failure and limited data center growth for power and floor space.</p> <p>In addition, the project team has documented at least seven options for alternative solutions, which may be combined in order to reduce risk of our operational environment and increase reliability. If other solutions such as a second regional data center are determined by the Executive Committee to be our strategic direction, the team will follow change management principles to modify scope, cost, and schedule.</p>
<p><b>Conclusion:</b></p>	<p>The current state of resiliency for all our IT systems (from telecommunications through all applications) is a result of decisions, over many years, weighing the assessed risk against the investment required to build more resiliency into one or more components of IT systems. In addition, AEP's business model has evolved over the past decades with more real-time regulatory and operational reporting and feeds, such as Texas Meter Data. Many of the information technologies implemented at AEP can be designed for immediate or very quick recovery which can significantly strengthen AEP's data center resiliency. The event on February 28 and subsequent business disruption necessitates we re-evaluate our data center's reliability in order to support our daily activities.</p> <p>In order to support the planned Tier III data center in the greater Columbus region, this project shall be initiated to design the 'high availability' solution for AEP's most critical business processes and applications. This effort will maximize the value AEP receives from our existing technology investments and position us to sustain operations during a minor business interruption that requires recovery of the main data center as well as capabilities to recover during a significant business interruption.</p>

## Capital Program Approval Requisition One Page Summary

<b>Company:</b>	AEP SYSTEM		<b>Version: 3</b>																																																																	
<b>Project:</b>	INTDISTOP - Integrated Distribution Operations Program - - Revision																																																																			
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																																																			
<b>Description:</b>	<p>All AEP operating companies currently utilize two GE software products to manage the distribution network on a daily basis - the Smallworld geographic information system (GIS) and the PowerOn outage management system (OMS). Both systems have been heavily customized since their implementation over a decade ago to streamline work processes, however this has resulted in lengthy and costly upgrades and increased support costs.</p> <p>The GIS system was implemented in 1997 and last upgraded in 2007. The GIS system acts as the asset management system of record for all AEP distribution assets.</p> <p>The OMS is currently used by all operating companies daily to perform outage management functions. The OMS was implemented in 2001 and last upgraded in 2008. The OMS receives asset data from the GIS and contains logic to perform outage prediction and manage service restoration efforts. Outage prediction is based on customer calls without specific knowledge about the state of the electrical network.</p> <p>The utility industry is pursuing the deployment of fully integrated distribution management systems (DMS) that interoperate with their GIS and OMS. The DMS provides distribution dispatch personnel the ability to understand the real-time condition and configuration of the distribution network, automatically reconfigure the network to isolate faults, provide fault detection and location information, perform manual circuit switching, and provide switching and tagging development and simulation tools. IDOPLEASE is an associated LI Program for this CI Program for approximately \$1.5M.</p>																																																																			
<b>Revision Reason:</b>	<p>In March 2014, a comprehensive refresh (budget and schedule) was completed to confirm project status. The need for the project refresh was driven by several factors including delays of key project milestones; the identification of additional required functionality, configuration and testing; and a required change to the DMS product to be deployed. Substantial risks to the project schedule were also identified and the overall project confidence level was lower than desired.</p> <p>This project refresh revealed the need to extend the project timeline (to December 2015) and request additional capital funds (\$19.1M) to complete the original IDOP scope. The additional capital funds are required to cover the following areas.</p> <ul style="list-style-type: none"> <li>• Underestimation of originally identified work (44%)</li> <li>• Increased License Terms (22%)</li> <li>• Required work not originally identified (15%)</li> <li>• Costs to improve going forward success (7%)</li> <li>• Future contingency to cover unknown issues and mitigate risks (6%)</li> <li>• Delays in past deliverables (6%)</li> </ul>																																																																			
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 20%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 20%;">Previously Approved Amount</th> <th style="width: 20%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>APP_SYS_SW</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>APCO</td> <td>APP_SYS_SW</td> <td>\$2,806,589</td> <td>\$3,436,289</td> <td>\$6,242,878</td> </tr> <tr> <td>IMPCO</td> <td>APP_SYS_SW</td> <td>\$1,701,832</td> <td>\$2,094,279</td> <td>\$3,796,111</td> </tr> <tr> <td>KGPCO</td> <td>APP_SYS_SW</td> <td>\$139,938</td> <td>\$167,200</td> <td>\$307,138</td> </tr> <tr> <td>KYPCO</td> <td>APP_SYS_SW</td> <td>\$506,772</td> <td>\$618,257</td> <td>\$1,125,029</td> </tr> <tr> <td>OHPCO</td> <td>APP_SYS_SW</td> <td>\$4,262,799</td> <td>\$5,218,854</td> <td>\$9,481,653</td> </tr> <tr> <td>PSO</td> <td>APP_SYS_SW</td> <td>\$1,557,347</td> <td>\$1,919,546</td> <td>\$3,476,893</td> </tr> <tr> <td>SWEPCO</td> <td>APP_SYS_SW</td> <td>\$1,523,963</td> <td>\$1,882,182</td> <td>\$3,406,145</td> </tr> <tr> <td>TCC</td> <td>APP_SYS_SW</td> <td>\$2,288,362</td> <td>\$2,901,958</td> <td>\$5,190,320</td> </tr> <tr> <td>TNC</td> <td>APP_SYS_SW</td> <td>\$543,450</td> <td>\$671,305</td> <td>\$1,214,755</td> </tr> <tr> <td>WPCO</td> <td>APP_SYS_SW</td> <td>\$120,636</td> <td>\$148,543</td> <td>\$269,179</td> </tr> <tr> <td colspan="2"><b>Total</b></td> <td><b>\$15,451,688</b></td> <td><b>\$19,058,413</b></td> <td><b>\$34,510,101</b></td> </tr> </tbody> </table>			Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	APP_SYS_SW	\$0	\$0	\$0	APCO	APP_SYS_SW	\$2,806,589	\$3,436,289	\$6,242,878	IMPCO	APP_SYS_SW	\$1,701,832	\$2,094,279	\$3,796,111	KGPCO	APP_SYS_SW	\$139,938	\$167,200	\$307,138	KYPCO	APP_SYS_SW	\$506,772	\$618,257	\$1,125,029	OHPCO	APP_SYS_SW	\$4,262,799	\$5,218,854	\$9,481,653	PSO	APP_SYS_SW	\$1,557,347	\$1,919,546	\$3,476,893	SWEPCO	APP_SYS_SW	\$1,523,963	\$1,882,182	\$3,406,145	TCC	APP_SYS_SW	\$2,288,362	\$2,901,958	\$5,190,320	TNC	APP_SYS_SW	\$543,450	\$671,305	\$1,214,755	WPCO	APP_SYS_SW	\$120,636	\$148,543	\$269,179	<b>Total</b>		<b>\$15,451,688</b>	<b>\$19,058,413</b>	<b>\$34,510,101</b>
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<b>Project Dates:</b>	<b>Start Date :</b> 01/01/2012	<b>In Service Date :</b> 11/30/2015	<b>Completion Date:</b> 11/30/2015																																																																	
<b>Regulatory Cost Recovery:</b>	AEP System -- \$34.5M (100%) Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																																																			
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																																																		
<b>Approved By :</b> Operating Company Presidents , Alberto G Ruocco, Lana	<b>Approved On :</b> 08/28/2014																																																																			

L. Hillebrand, Nicholas K Akins	
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## Capital Program Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>	<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0
	Offsets Required	\$10,724,130	\$9,355,107	\$6,433,096	\$4,299,491
	<b>Total</b>	<b>\$10,724,130</b>	<b>\$9,355,107</b>	<b>\$6,433,096</b>	<b>\$4,299,491</b>

<b>Required Signatures:</b>	<b>Status</b>	<b>Name</b>	<b>Date</b>
	Approved	Stanley J Bundy	08/08/2014
	Approved	Christopher K Duffy	08/08/2014
	Approved	Gary O Spitznogle	08/08/2014
	Approved	Ronald K Ford	08/08/2014
	Approved	Ranie K Wohnhas	08/11/2014
	Approved	Steven H Ferguson	08/11/2014
	Approved	Carla E Simpson	08/11/2014
	Approved	David P Sartin	08/11/2014
	Approved	Sandra S Bennett	08/12/2014
	Approved	Michael A Rozsa	08/12/2014
	Approved	Alberto G Ruocco	08/13/2014
	Approved	Charles R Patton	08/13/2014
	Approved	Venita McCellon-Allen	08/13/2014
	Approved	J Stuart Solomon	08/13/2014
	Approved	A Wade Smith	08/13/2014
	Approved	Paul Chodak III	08/14/2014
	Approved	Gregory G Pauley	08/14/2014
	Approved	Pablo A Vegas	08/14/2014
	Approved	Randolph J Ware	08/14/2014
	Approved	Lana L. Hillebrand	08/19/2014
	Approved	Lonni L Dieck	08/25/2014
Bypassed	Nicholas K Akins	08/28/2014	
Approved	Alesia A Austin	08/28/2014	

<b>Project Contacts:</b>	<b>Type</b>	<b>Name</b>
	Detail Provider	SMITH,JAMES W
	Project Manager	BENNON,ROBERT J

## Capital Program Approval Requisition

### Component CI's

Component ID	Company	Description of Work	Previously Approved (\$)		This Submission (\$)		Total Authorized (\$)		
			Capital	Removal	Capital	Removal	Capital	Removal	Total
ITUOP1125	AEPSC	Electric Office	0	0	0	0	0	0	0
ITUOP1181	AEPSC	DOMA-CAP-GENe Upgrade 2014	0	0	0	0	0	0	0
ITUOP1109	AEPSC	Int Dist Op Plat-AEPSC	0	0	0	0	0	0	0
ITUOP1126	AEPSC	PowerOn Version 4.2	0	0	0	0	0	0	0
ITUOP1180	AEPSC	DOMA-CAP-GENe Upgrade 2013	0	0	0	0	0	0	0
ITUOP1157	AEPSC	Indiana GENe	0	0	0	0	0	0	0
ITUOP1127	AEPSC	Outage Mgmt Common Archive	0	0	0	0	0	0	0
<b>AEPSC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
ITUOP1099	APCO	Int Dist Op Plat-APCO Dist	2,806,589	0	3,436,289	0	6,242,878	0	6,242,878
<b>APCO Total :</b>			<b>2,806,589</b>	<b>0</b>	<b>3,436,289</b>	<b>0</b>	<b>6,242,878</b>	<b>0</b>	<b>6,242,878</b>
ITUOP1103	IMPCO	Int Dist Op Plat-I&M Dist	1,701,832	0	2,094,279	0	3,796,111	0	3,796,111
<b>IMPCO Total :</b>			<b>1,701,832</b>	<b>0</b>	<b>2,094,279</b>	<b>0</b>	<b>3,796,111</b>	<b>0</b>	<b>3,796,111</b>
ITUOP1107	KGPCO	Int Dist Op Plat-KGP Dist	139,938	0	167,200	0	307,138	0	307,138
<b>KGPCO Total :</b>			<b>139,938</b>	<b>0</b>	<b>167,200</b>	<b>0</b>	<b>307,138</b>	<b>0</b>	<b>307,138</b>
ITUOP1097	KYPCO	Int Dist Op Plat-KP Dist	506,772	0	618,257	0	1,125,029	0	1,125,029
<b>KYPCO Total :</b>			<b>506,772</b>	<b>0</b>	<b>618,257</b>	<b>0</b>	<b>1,125,029</b>	<b>0</b>	<b>1,125,029</b>
ITUOP1108	OHPCO	Int Dist Op Plat-OPCO Dist	2,070,763	0	7,410,890	0	9,481,653	0	9,481,653
ITUOP1106	OHPCO	Int Dist Op Plat-CSP Dist	2,192,036	0	-2,192,036	0	0	0	0
<b>OHPCO Total :</b>			<b>4,262,799</b>	<b>0</b>	<b>5,218,854</b>	<b>0</b>	<b>9,481,653</b>	<b>0</b>	<b>9,481,653</b>
ITUOP1102	PSO	Int Dist Op Plat-PSO Dist	1,557,347	0	1,919,546	0	3,476,893	0	3,476,893
<b>PSO Total :</b>			<b>1,557,347</b>	<b>0</b>	<b>1,919,546</b>	<b>0</b>	<b>3,476,893</b>	<b>0</b>	<b>3,476,893</b>
ITUOP1101	SWEPCO	Int Dist Op Plat-SWPCO Dist TX	528,719	0	654,977	0	1,183,696	0	1,183,696
ITUOP1100	SWEPCO	Int Dist Op Plat-SWEPCO Dist	995,244	0	1,227,205	0	2,222,449	0	2,222,449
<b>SWEPCO Total :</b>			<b>1,523,963</b>	<b>0</b>	<b>1,882,182</b>	<b>0</b>	<b>3,406,145</b>	<b>0</b>	<b>3,406,145</b>
ITUOP1105	TCC	Int Dist Op Plat-AEPTC Dist	2,288,362	0	2,901,958	0	5,190,320	0	5,190,320
<b>TCC Total :</b>			<b>2,288,362</b>	<b>0</b>	<b>2,901,958</b>	<b>0</b>	<b>5,190,320</b>	<b>0</b>	<b>5,190,320</b>
ITUOP1098	TNC	Int Dist Op Plat-AEPTN Dist	543,450	0	671,305	0	1,214,755	0	1,214,755
<b>TNC Total :</b>			<b>543,450</b>	<b>0</b>	<b>671,305</b>	<b>0</b>	<b>1,214,755</b>	<b>0</b>	<b>1,214,755</b>
ITUOP1104	WPCO	Int Dist Op Plat-WP Dist	120,636	0	148,543	0	269,179	0	269,179
<b>WPCO Total :</b>			<b>120,636</b>	<b>0</b>	<b>148,543</b>	<b>0</b>	<b>269,179</b>	<b>0</b>	<b>269,179</b>
<b>Grand Total :</b>			<b>15,451,688</b>	<b>0</b>	<b>19,058,413</b>	<b>0</b>	<b>34,510,101</b>	<b>0</b>	<b>34,510,101</b>

## Capital Program Approval Requisition

### Additional Information

<p><b>Project Justification:</b></p>	<p>Current AEP GIS and OMS platforms have been used for over a decade and were developed in a technology no longer supported under the current Microsoft operating system at the end of 2014. Specifically, they will not be supported by GE and may not operate properly on the Windows 7 operating system. Thus, any problems that occur with the software would need to be addressed by AEP or not completed and future upgrades would not be possible. This condition exposes all AEP operating companies to operational failures and security risks in two key systems used to operate our distribution network every day.</p> <p>AEP must maintain systems vital to daily operation of the distribution electrical network. Changes to current systems must be completed so AEP personnel in all operating companies can properly maintain and operate the distribution network. In addition, AEP's distribution strategy outlines a plan to transform our single-source, manually-operated distribution circuits into a fault-tolerant, resilient, interconnected distribution grid with multiple energy sources equipped with real-time visualization, automation and control. These changes will be completed in a manner maintaining the current functionality on a stable platform, adds key functions to further streamline work, and provides the foundation upon which AEP can build future capabilities. Following an analysis of the alternatives, AEP believes that the best approach is to pursue an integrated suite of tools from a single vendor for our GIS, OMS, and DMS needs. This approach reduces our implementation costs, implementation timeline, streamlines support and reduces risk. This is a common approach pursued across the utility industry. While utilities may be selecting different vendors, they are often selecting an integrated approach that minimizes customizations and leverages their current OMS vendor.</p>
<p><b>Other Alternatives Considered:</b></p>	<p><b>Do nothing:</b> Without the upgrades, these vital operational systems will reside on unsupported platforms with limited vendor support. Stability and security risks will exist and increase over time. AEP will not be able to expand the use of DMS beyond the current 10% circuit limit. Lack of integration will most likely minimize the use of DMS due to the lack of timely data and concerns over maintaining common network models in OMS and DMS. AEP would need to support two DMS systems (ENMAC-I&amp;M and GENE-Ohio).</p> <p><b>Complete the OMS and GIS upgrades but select an alternate DMS product:</b> Reviewed potential Distribution Management Systems (DMS) available for use in gridSMART project deployments. Systems considered AREVA, GE (ENMAC), ABB and Siemens. GE product selection reaffirmed beliefs that DMS implementation was best coupled with integration of GE Geographic Information (GIS) and GE Outage Management (OMS) systems. Integration of a non-GE product with OMS and GIS systems will most likely require extensive AEP customization.</p> <p><b>Complete OMS and GIS upgrades but further extend Transmission SCADA systems:</b> Integration of Transmission SCADA will still be required with OMS and GIS. Customization by AEP will be required. AEP would have to draw circuits and their associated data in three systems. Custom integration and development of custom functions would increase implementation time as well as operation and support costs. Increased security requirements for distribution systems will be necessary to meet NERC CIP requirements. This would include additional distribution dispatcher training, increased reporting, and additional security measures.</p>
<p><b>Conclusion:</b></p>	<p>Approval is requested to deploy the following projects over a 3 year period beginning in 2012:</p> <ol style="list-style-type: none"> <li>1. Replace our current GE Smallworld GIS system with the GE Electric Office.</li> <li>2. Upgrade our current version of PowerOn.</li> <li>3. Implement a common archive solution for outage information.</li> <li>4. Purchase an enterprise license of the GE GENE DMS product and implement the foundational integrations required to GIS and OMS.</li> <li>5. Remove the GE ENMAC product from production.</li> </ol>



Date January 16, 2013



<b>Company</b> American Electric Power Service Corporation	<b>CI/LI/CP/Program Number</b> IRROUTING	<b>Version</b> 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B <i>JLF</i> 1-16-13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B <i>JLF</i> 1-16-13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	<i>DL 1/16/13</i>	
2	L. L. Dieck	See attached	
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	B. D. Radous		
	S. Burge		
	L.J. Weber		
	M. C. McCullough		
	D. E. Welch		
	R. P. Powers		
	L. Barton		
	Buckeye Power Approval		
	N. K. Akins		
3	Jenifer Fischer - 28th floor Ext 3032		
		<i>1-24-13</i>	Approved in PeopleSoft
		<i>Jan 2013</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Cathy Warchal - 28th Floor - Ext 1347

Scanned File Name: AEPSC IRROUTING.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation Version 1

**Project :** IRROUTING - Improvement Requisition Routing Application  
 1 Riverside Plaza, Columbus, OH

**Description:** Implement a system wide Improvement Requisition Application. AEP currently maintains several Lotus Notes routing databases that are utilized to process Capital and Lease Improvement Requisitions (IR) up through executive management approval. The IR's become the basis for the monthly Subsidiary Companies Board package. The existing multiple routing databases will become obsolete when the Lotus Notes application is retired. This project will implement one centralized system for all operating companies / business units to utilize, eliminating the need to rebuild duplicate systems when the existing applications are retired.

Multiple applications and vendors were assessed during the project study. The option chosen provide the most benefits at the least cost. This application will be developed by an external vendor (TAT Consulting) within the P/S Projects application.

Measurable benefits of implementing a centralized IR Routing process include:

- Provide one system for Business Unit and OpCo Executives to review and approve IR's
- Provide one system that is the official source of record for IR information and related data archiving
- Reduce audit risk and requisition preparation effort associated with generating the monthly Subsidiary Company Board package
- Remove redundant and duplicate data entry tasks
- Integrate IR process steps with the existing CI process that is currently maintained in PeopleSoft Projects
- Provide enhanced reporting capabilities related to Budget, Actuals and IR Estimates

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 920,000	\$ 920,000

Cash Flow:	Prior Years	2013	2014	Future Years	Total
Capital	\$ -	\$ 920,000	\$ -	\$ -	\$ 920,000
Removal	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 920,000	\$ -	\$ -	\$ 920,000
Less CIAC/Other Credits	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Net AEP Cash Flow</b>	\$ -	\$ 920,000	\$ -	\$ -	\$ 920,000
Associated O&M	\$ -	\$ 50,000	\$ -	\$ -	\$ 50,000

**Start Date:** 2/1/2013      **Completion Date:** 6/30/2013      **In Service Date:** 6/30/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** Included in IRC Presentation N/A SC Project Project Funded Yes Offset Source N/A

*Requested future year funds are included in the last official Forecast.*

**Approved By:** L. Dieck

**Approved On:**

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	920,000	-	920,000
<b>Total</b>	<b>\$ 920,000</b>	<b>\$ -</b>	<b>\$ 920,000</b>



**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ 920,000	N/A
Offset	\$ -	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	SVP, Business Unit	L Dieck		1/16/13
amt ≤ \$ 10m	Opco President			
amt ≤ \$ 20m	EVP & COO/EVP			
amt ≥ \$ 20m	President & CEO			
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		1/16/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Darryl Lynch / Bryan Ingram	200-1142
Requisition Detail Provider		

## Capital Improvement Approval Requisition

Multiple applications and vendors were assessed during the project analysis stage. The selection of a supported application along with a least cost alternative was chosen to implement the project. This application will be housed in PeopleSoft projects, which is an AEP IT supported application.

### Other Alternatives Considered

#### Option 1 – Do nothing

Pros:

- Low Cost

Cons:

- Current process deficiencies remain
- Existing functionality of multiple applications will be replaced as part of Lotus Notes Migration – **NO consideration for streamlining process**
- Business units may replace/enhance systems to gain additional functionality
- Replicating existing processes may require significant expenditures

#### Option 2 – Implement a solution using Utilities International to develop a routing application in the UIPlanner Application

Pros:

- Same vendor as Budget System and Financial Model
- Vendor knows our processes and systems (including PowerPlant)
- Proven expertise at other Utilities
- Application configurable by BU owners (vs. IT code)

Cons:

- High Cost
- Increased user learning curve
- Additional integration points with PS
- Users would need to access multiple applications for set up and maintenance (PS and UIPlanner)

#### Option 3 – Implement a solution using internal resources for development or external vendor to develop an application in PeopleSoft Projects

Pros:

- Current CI Process is in PeopleSoft (PS)
- Efficient bolt on integration with PS
- AEP Standard Solution for future development
- Supports Finance Archiving Strategy
- BU's are on board with PS approach and are familiar with PS

Cons:

- Significant amount of work to be done off shore - AEP has limited exposure to off shore methodology
- Application configuration maintained centrally by IT
- Increased testing related to PS upgrades

### Conclusion

Select Option 3 to capture opportunity for process improvements and implement as the least cost alternative.

### Associated/Future Projects

None



**American Electric Power**  
**IT Project Initiation**  
**Opower Data Transfers – Kentucky Power**  
**<PPM ID>**

**Purpose:** *This document should be used by the BU with the help of the Demand BSA to initiate an IT project.*

**Revision History**

<b>Date</b>	<b>Version</b>	<b>Description</b>	<b>Author</b>
10.7.2014	1.0	Opower Data Transfers – Kentucky Power	Dylan Drugan

**Author Instructions:** *There is help information, formatted with the Intense Quote style, in most sections. It is not intended for any information to be entered there and it can be deleted at the author's discretion. The proper place to enter information is either denoted by the phrase "Enter the necessary information here" or in a table below the help information.*

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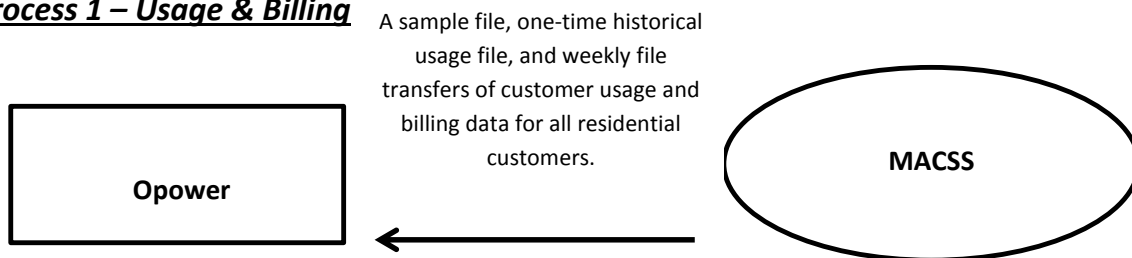
# 1 PROJECT DEFINITION

## 1.1 BUSINESS PROBLEM/OPPORTUNITY

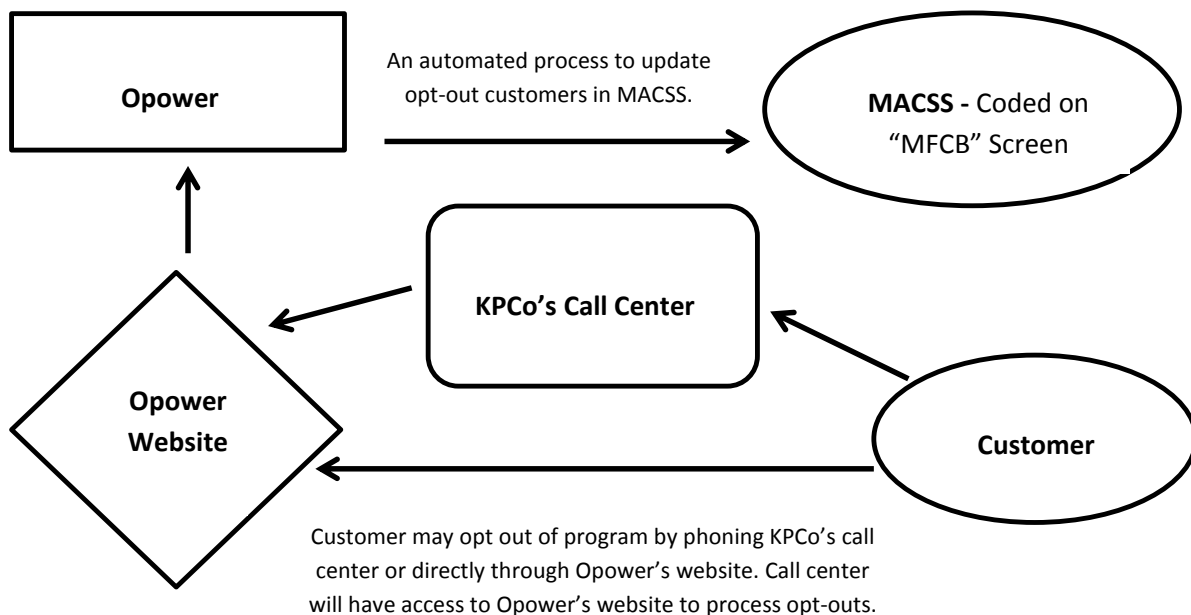
- KPCo is required by their Commission to offer a portfolio of energy efficiency programs. Additionally, KPCo recently was ordered to increase spending on the portfolio.
- KPCo has filed to implement the Residential Home Performance Program beginning on 1/1/2015.
- KPCo is contracting with Opower to implement this program. The program delivers home energy reports to customers to educate them about their energy use and influence their energy consumption behavior.
- For implementing the program, KPCo receives a return on investment (shared savings component).

## 1.2 PROJECT SCOPE

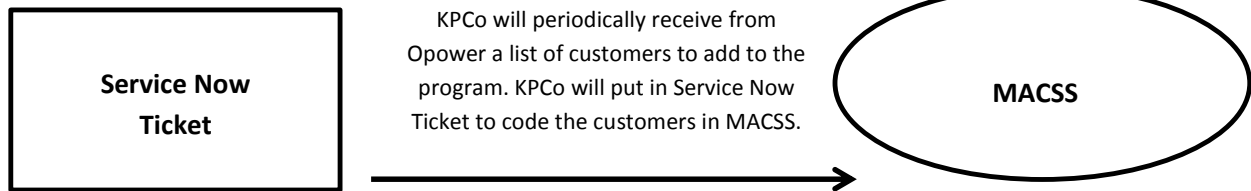
### Process 1 – Usage & Billing



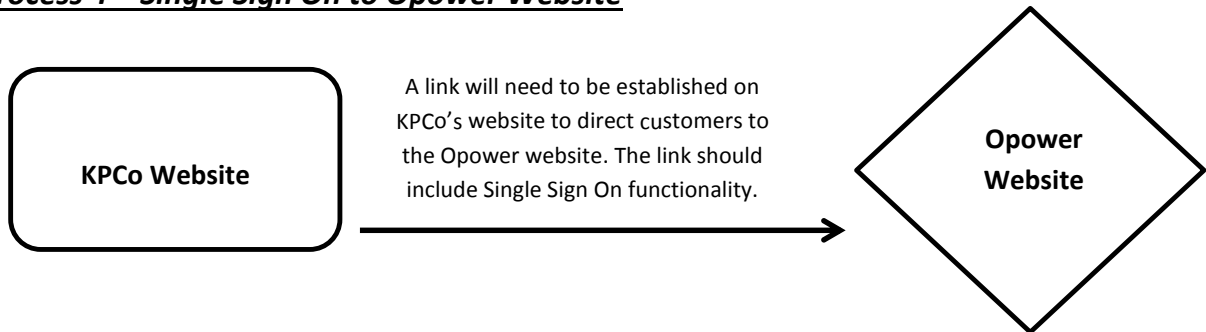
### Process 2 – Opt-Outs



### **Process 3 – New Customers**



### **Process 4 – Single Sign On to Opower Website**



## **1.3 FUNCTIONALITY REQUESTED**

**Process:** The new processes will be identical to the processes and data transfers previously established between Opower and AEP Ohio in 2010 and I&M in 2012. As described in Section 1.2, there are four processes identical to previous efforts already established for AEP Ohio and I&M:

- Usage and Billing – KPCo will provide to Opower a sample file for testing, a one-time historical billing data extract, and an ongoing weekly billing data extract for all residential customers.
- Opt-outs - An ongoing automated process will be established for updating customer opt-outs within MACSS.
- New customers – KPCo will increase the number of participants annually and may increase participation on a periodic basis due to opt-outs. A process for updating new participants will be established through ServiceNow tickets.
- Opower Website – Opower will offer a website linked on the KPCo website to allow customers to view information about their energy consumption behavior. Customers will login with their kentuckypower.com credentials to access Opower's website (Single Sign On functionality).

**People:** Call center Customer Service Representatives (“CSRs”) will require training on how to opt-out customers, access the Opower website, and field calls about the program. Training will be provided by Opower. Additionally, once or twice per year a ServiceNow Ticket will be created to code new participants in MACSS.



**Technology:** As described in Section 1.2, the main technology activities will include: 1) a data transfer integration between MACSS and Opower's SFTP site; and 2) a link established on KPCo's customer website with Single Sign-On functionality to allow customers to access the Opower website.

## 1.4 OUT OF SCOPE (OPTIONAL)

To avoid any confusion regarding out-of-scope items, Opower has provided documents detailing the standards for the data transfer processes and SSO functionality.

## 1.5 CONSTRAINTS/ASSUMPTIONS (OPTIONAL)

KPCo is awaiting approval on their 2015 Energy Efficiency Portfolio from the Kentucky Public Service Commission. KPCo expects to launch this program on January 1, 2015. Opower has committed to working with AEP on this data transfer effort and their work is not affected by the timing of Commission approval.

## 1.6 PROPOSAL TEAM

Name	Title	Role
Don Nichols & EJ Clayton	Executive Sponsors	To assure the project scope is clearly defined and is correct; to assess further phases of the project.
Dylan Drugan	Subject Matter Expert (SME)	Provide detailed requirements.
Scott Bishop	Subject Matter Expert (SME)	Provide detailed requirements.

## 1.7 BUSINESS DATE DRIVERS (OPTIONAL)

KPCo has filed to launch this program on January 1, 2015. KPCo can receive a financial incentive for achieving energy savings resulting from this program. Any delay in program launch would affect KPCo's ability to maximize this financial incentive.

## 1.8 PROJECT URGENCY

### 1 – High – "Must Have"

- *Contributes to meeting the specifications of a federal or state mandate that has no other work around and a severe penalty or loss of revenue for non-compliance*
- *Required to meet a contractual obligation to a 3rd party for which there is no other work around*

- *Mitigates a Material Deficiency in a primary internal control that has no other work around*
- *System failure of a Business Critical Application is imminent within the next 12 mos. (i.e. DR Tier 1)*

2 – Medium – “Need to Have”

- *Regulatory order where a manual is feasible but burdensome and has high potential for inaccuracy*
- *Provides for the reduction of severe financial or operational risk to the corporation or its employee.*
- *Project provides a material increase in revenue or decrease in operating expense*
- *Project mitigates a Significant Deficiency in a primary internal control that has no other work around*
- *Project ensures system availability and performance is maintained for Business Critical Applications for the next 1-2 years. (i.e. DR Tier 1)*
- *Projects that help achieve AEP or Operating Company strategic goals*

3 – Low – “Like to Have”

- *A regulatory order that has a manual work around or a low probability of relevance*
- *Provides operational efficiencies that do not have immediate cost savings*
- *Helps a department or individual work group achieve tactical goals*
- *Optimizes system availability and performance*

This project is a 1-High-“Must Have”. KPCo has filed with their Commission to launch this program on January 1, 2015.

## 2 BUSINESS CASE

### 2.1 OPTIONS

<b>Option</b>	<b>Strengths</b> (Internal)	<b>Weaknesses</b> (Internal)	<b>Opportunities</b> (External)	<b>Threats</b> (External)
<b>No Action</b>				---KPCo will not meet regulatory requirement for expanded cost-effective programs.
<b>Option 1 – Selecting Opower</b>	---Opower is least expensive option when internal IT costs are included. ---Opower already has gone through IT process with AEP Ohio and I&M. ---Opower is a proven		---Program educates customers on their energy usage behavior. May lead to higher customer satisfaction scores.	

	entity that can deliver their proposed kWh savings.			
<b>Option 2 – Selecting Another Vendor</b>	---New vendor may offer better working relationship with KPCo's EE team. However, AEP Ohio has used Opower since 2010 and is extending their contract to 2017. Evidence shows that Opower can provide same level of service to KPCo.	---3 other vendors were more expensive than Opower when IT work costs are included. ---Other vendors are unproven.	---New vendor has potential to provide more kWh savings than Opower. However, KPCo's interviews and evaluation showed that Opower offered the most <b>credible</b> amount of kWh savings.	---IT work already has been completed for Opower with AEP Ohio and I&M. In moving to another vendor, KPCo would not be taking advantage of the cost efficiency associated with the previous work.

## 2.2 COST (A BREAKDOWN OF THE PROJECT COSTS AND RELATED FINANCING OF THE RECOMMENDED OPTION)

### 2.2.1 FUNDING SOURCE

<b>Benefiting Location:</b>	110	<b>Rationale:</b>	KPCo Distribution – EE falls under this group.
<b>Attribution Basis:</b>	65,000 Customers	<b>Rationale:</b>	# of customers served through the program over a three year period.
<b>Project Costing Business Unit (PCBU):</b>	SHSVC – Shared Services		
<b>Billable Business Unit (BBU):</b>	IT Demand Management		
<b>Funding Sources:</b>	IT		

2.2.2 CLASS 5 – SCOPING ESTIMATE

Project Cost							
	2014	2015	2016	2017	2018	Total	
<b>One Time Project Costs</b>							
<b>Capital</b>							
<i>IT</i>							
Internal Labor	\$ 120,000.00					\$ 120,000.00	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
Professional Services						\$ -	
<b>Total IT</b>	<b>\$ 120,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 120,000.00</b>	
<i>Infrastructure</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
Professional Services						\$ -	
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<i>Business Unit</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
Professional Services						\$ -	
<b>Total Business Unit</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>Total Capital</b>	<b>\$ 120,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 120,000.00</b>	
<b>O&amp;M</b>							
<i>IT</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
Professional Services						\$ -	
<b>Total IT</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<i>Infrastructure</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
Professional Services						\$ -	
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<i>Business Unit</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
Professional Services						\$ -	
<b>Total Business Unit</b>	<b>\$ 97,000.00</b>	<b>\$ 118,000.00</b>	<b>\$ 201,000.00</b>	<b>\$ 595,000.00</b>	<b>\$ -</b>	<b>\$ 1,619,000.00</b>	
<b>Total O&amp;M</b>	<b>\$ 97,000.00</b>	<b>\$ 332,000.00</b>	<b>\$ 595,000.00</b>	<b>\$ 595,000.00</b>	<b>\$ -</b>	<b>\$ 1,619,000.00</b>	
<b>Total One Time Project Costs</b>	<b>\$ 217,000.00</b>	<b>\$ 332,000.00</b>	<b>\$ 595,000.00</b>	<b>\$ 595,000.00</b>	<b>\$ -</b>	<b>\$ 1,739,000.00</b>	
<b>Recurring Costs</b>							
<b>O&amp;M</b>							
<i>IT</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
<b>Total IT</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<i>Infrastructure</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<i>Business Unit</i>							
Internal Labor						\$ -	
External Labor						\$ -	
Hardware						\$ -	
Software						\$ -	
Other						\$ -	
<b>Total Business Unit</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>Total O&amp;M</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>Total Recurring Costs</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	

Class 5 - Scoping Estimate	Lower Range (-50%)	Upper Range (+100%)
\$120,000	\$60,000	\$240,000

Funding Requested to Produce Class 4 - High-Level Estimate
\$6,000 (5%)

### 2.2.3 HLE (HIGH-LEVEL ESTIMATE) CONFIDENCE

Confidence Level (High/Medium/Low)	Explanation
Low	The estimate is Level 5. However, it was benchmarked against identical work that was performed in 2012 with I&M's Opower contract.

## 2.3 BENEFITS (THE COST OF THE PROJECT COMPARED TO THE EXPECTED RETURNS)

### 2.3.1 QUANTITATIVE VALUE/COSTS

All program costs and net lost revenues resulting from the energy savings are recovered through a rider on the customer's bill. KPCo also will have the opportunity to earn a return on investment and meet stated regulatory mandates for expanded programs.

### Quantitative Value/Costs

	2014	2015	2016	2017	2018
<b>Type 1 Benefits</b>					
Increased Revenue					
Decreased Expenses					
<b>Type 2 Benefits</b>					
Avoided Costs					
Opportunity Cost					
<b>Costs (Direct Capital)</b>					
Cost to Achieve	\$ 120,000.00				
<b>Costs (O&amp;M)</b>					
<b>Total</b>	<b>\$ 120,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

Net Present Value (NPV): \$ **110,599.08**

Discount Rate: **8.50%**

### 2.3.2 QUALITATIVE VALUE

Type 3: Program will educate customers on their energy usage behavior and has the potential to improve customer satisfaction.

Type 4: KPCo has been ordered by their Commission to increase spending on their EE portfolio. This program helps KPCo fulfill that regulatory requirement.

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITCHR1371 - Environmental Laboratory Information Management System -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>Purchase and configure Titan, an external vendor-developed Environmental Lab Information Management System (LIMS) to be implemented company wide.          Scope of the implementation:</p> <ul style="list-style-type: none"> <li>• Upgrade Dolan Laboratory's Sample Master LIMS</li> <li>• Replace Shreveport Laboratory's current MS Access LIMS</li> <li>• Track samples back to the bottle when the analysis is completed, required for lab accreditation</li> <li>• Implement the following LIMS functionality: electronic Chain of Custody forms, sample barcoding, sample pre-check-in, mobile data collection and expand Industrial Hygiene data reporting</li> <li>• Environmental groups in the following business units will benefit with the new functionality include Shared Services, Generation, T&amp;D, River and Rail Operations</li> </ul> <p>The main business driver was generated from recent audit findings from the National Environmental Laboratory Accreditation Conference (NELAC).</p> <ul style="list-style-type: none"> <li>• NELAC accreditation for Dolan and Shreveport labs is an Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit requirement to allow the submittal of Discharge Monitoring Reports (DMR) parameter analyses. NPDES permits are issued to maintain water quality where facilities are discharging into rivers, streams and lakes</li> <li>• Secondary drivers include consolidation of Dolan and Shreveport into a single LIMS, and gaining additional functionality for improved process management and check-in time savings during peak season of sample processing</li> </ul>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$700,956</td> <td>\$700,956</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$700,956</b></td> <td><b>\$700,956</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$700,956	\$700,956	<b>Total</b>		<b>\$0</b>	<b>\$700,956</b>	<b>\$700,956</b>																											
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<b>Project Dates:</b>	<b>Start Date :</b> 12/22/2014 <b>In Service Date :</b> 04/30/2016 <b>Completion Date:</b> 06/30/2016																																											
<b>Regulatory Cost Recovery:</b>	<u>AEP System</u> -- \$0.7M (100%)  Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 12/08/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$230,246	\$300,902	\$98,635	\$629,783
	<b>Total</b>	<b>\$0</b>	<b>\$230,246</b>	<b>\$300,902</b>	<b>\$98,635</b>	<b>\$629,783</b>
<b>Required Signatures:</b>	<b>Status</b>		<b>Name</b>		<b>Date</b>	
	Approved	Stanley J Bundy		12/04/2014		
	Approved	Jeffrey P White		12/04/2014		
	Approved	Michael A Rozsa		12/04/2014		
	Approved	John M McManus		12/04/2014		
	Approved	Alberto G Ruocco		12/05/2014		
	Approved	Franz D Messner		12/05/2014		
	Approved	Alesia A Austin		12/08/2014		
<b>Project Contacts:</b>	<b>Type</b>		<b>Name</b>			
	Detail Provider	GRIMM,JOHN E				
	Project Manager	GRIMM,JOHN E				

## Capital Improvement Approval Requisition

### Additional Information

<p><b>Project Justification:</b></p>	<p>The LIMS applications utilized at Dolan and Shreveport Labs are a critical component in providing timely reporting to support AEP's compliance requirements. Implementing Titan will result in opportunities to simplify and strengthen the ability to meet requirements placed by accrediting bodies. Titan is a true enterprise application that has the capability to grow with the large user base planned for a companywide implementation. There are many new features that will aid in processing the ever increasing sample load and provide tools for tracking compliance requirements at the time of completion of the results.</p> <p>New Detailed Functionality:</p> <ul style="list-style-type: none"> <li>• Samples can be tracked back to the bottle when the analysis is completed; required for Lab accreditation</li> <li>• Chemical Inventory in Titan is much more robust</li> <li>• Perform the same "as received/dry" calculations as Sample Master and both can be placed on the report for the same result</li> <li>• Same sample can be run with different methods</li> <li>• Tests can be reported in different units on the same sample/aliquot</li> <li>• Titan allows for aliquots to be removed from a sample in any order</li> <li>• Titan utilizes a user modifiable XML based parser/mapper which can also be used directly from the instruments</li> <li>• Requestors have access to view primary status of results</li> <li>• Simplify the lab sampling operations by reducing spreadsheet use, manual uploads and manual data entry.</li> <li>• Testing can be performed on Discharge Monitoring Report (DMR) permit limits on completion of analysis to provide immediate notification for resampling as required</li> <li>• Track minimum detection limit on lab equipment</li> </ul>
<p><b>Other Alternatives Considered:</b></p>	<p>Other alternatives considered include:</p> <p>Sample Master Option</p> <ul style="list-style-type: none"> <li>• Modification of the existing application(s) to meet accreditation would require substantial time investment and would serve as a temporary patch at best</li> <li>• Performance unacceptable on Wide Area Network (WAN)</li> <li>• Application maintenance for thick client not optimal</li> <li>• Titan was not available during the Sample Master implementation</li> </ul> <p>Other vendor applications</p> <ul style="list-style-type: none"> <li>• Other vendor applications were reviewed; Titan was evaluated to be the appropriate solution for meeting overall requirements of LIMS</li> </ul>
<p><b>Conclusion:</b></p>	<p>Titan is an enterprise application for multiple laboratories that provides compliance requirements to meet NELAC certification.</p> <p>With the many additional features that follow closely to the planned roadmap for LIMS at AEP benefits can be obtained companywide.</p>



Date January 16, 2013



<b>Company</b> American Electric Power Service Corporation	<b>CI/LI/CP/Program Number</b> ITCOP1227	<b>Version</b> 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B <i>JLF</i> 1-16-13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B <i>JLF</i> 1-16-13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	<i>DL</i> 1/17/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	B. D. Radous		
	S. Burge		
	L.J. Weber		
	M. C. McCullough		
	D. E. Welch		
	R. P. Powers		
	L. Barton		
	Buckeye Power Approval		
	N. K. Akins		
2	Jenifer Fischer - 28th floor Ext 3032		
		<i>1-24-13</i>	Approved in PeopleSoft
		<i>Jan 2013</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Cathy Warchal - 28th Floor - Ext 1347

Scanned File Name: AEPSC ITCOP1227.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation Version 1

**Project :** ITCOP1227 - Alstom GMS Replacement for PJM, SPP and ERCOT Regulated Companies  
 155 West Nationwide Blvd, Columbus, OH

**Description:** Replace the current Alstom Generation Management System (GMS) with a new Open Systems International (OSI) product for all markets that AEP participates in: PJM (Pennsylvania-Jersey-Maryland); SPP (Southwest Power Pool); and ERCOT (Electric Reliability Council of Texas).

The current GMS (Alstom) utilized by Real Time Market Operations in Commercial Operations is a highly customized vendor solution that is very expensive to upgrade (typically on a two year cycle). The Alstom product has a very clumsy user interface and very limited display capability which makes it necessary to supplement the product with other applications to provide the dispatchers sufficient real-time information to do their jobs effectively. AEP needs to make significant investments in the Alstom product to accommodate: Southwest Power Pool's (SPP) Integrated Marketplace (IM) initiative; AEP's separation of generation assets in Ohio into the new competitive company; and to keep up with the supported level of the vendor code to assure adequate support and North American Electric Reliability Corporation (NERC)/Critical Infrastructure Protection (CIP) compliance.

Replacing AEP's GMS with a configurable, non-customized GMS system from OSI provides the benefits of:

- \$1M in savings over 5 years
- \$600K savings per year after the first 5 years due to cheaper product upgrades
- Decreased Business Risk – Simplified displays provide quicker/better decisions
- Decreased O&M footprint – less custom code, less effort to maintain, decreased support required
- Better Compliance Monitoring – better logging of NERC CIP and other NERC requirements.

This CI is for all of the funds needed to replace Alstom for all markets. The charges will be tracked separately for each market and an attribution basis will be used to split the charges by generating facility based on MW capacity.

The funds needed for this project are partially offset by:

- Cancelling the Alstom upgrade project for a \$400K savings
- Reducing the CI for the SPP IM project by \$1.8M since this project is expected to deliver the functionality needed by SPP.

<b>Authorization Amount:</b>		<b>Previously Approved Amount</b>	<b>This Submission</b>	<b>Total Amount to be Authorized</b>
		-	\$ 5,491,041	\$ 5,491,041
<b>Total</b>	\$	-	\$ 5,491,041	\$ 5,491,041

	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 4,286,794	\$ 1,204,247	\$ -	\$ 5,491,041
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 4,286,794	\$ 1,204,247	\$ -	\$ 5,491,041
<b>Associated O&amp;M</b>	\$ -	\$ 150,375	\$ 189,825	\$ 189,825	\$ 530,025

**Start Date:** 1/2/2013      **Completion Date:** 9/1/2014      **In Service Date:** 6/1/2014

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** Included in IRC Presentation  Yes  Project Funded  Yes  Offset Source  AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/T. Busby      **Approved On:** 1/9/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	\$ 5,491,041	-	5,491,041
<b>Total</b>	<b>\$ 5,491,041</b>	<b>\$ -</b>	<b>\$ 5,491,041</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ 3,712,993	
Offset	N/A	N/A

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	01/09/13
amt ≤ \$ 10m	SVP Commercial Operations	Todd Busby	See electronic approval attached	01/09/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.	<i>D Lynch</i>	1/17/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Andrea Shepherd	614-583-6539
Requisition Detail Provider	Stan Bundy	614-716-3924

## Capital Improvement Approval Requisition

### Project Justification

AEP needs to make significant investments in the Alstom product to accommodate:

- SPP's Integrated Marketplace initiative;
- AEP's separation of generation assets in Ohio into the new competitive company
- Keeping up with the supported level of the vendor code to assure adequate support and NERC/CIP compliance.

The total expected investment in the Alstom product over the next 5 years to accommodate these needs is expected to exceed \$6.7M.

Switching to a new vendor product from OSI is expected to cost \$5.7M over 5 years for a savings of \$1M, and an additional \$600K per year after 5 years. Additional benefits include:

- Decreased Business Risk – Simplified displays provide quicker/better decisions
- Decreased O&M footprint – less custom code, less effort to maintain, decreased support required
- Better Compliance Monitoring – better logging of NERC CIP and other NERC requirements.

### Other Alternatives Considered

Research into considering other GMS vendors showed OSI was the leading contender with the most advanced technical architecture. A Request for Proposal (RFP) was issued only to OSI, and their response was evaluated against the option of continuing with Alstom.

### Conclusion

The OSI product "out of the box" has the necessary functionality required to satisfy the needs of all markets that AEP participates in without expensive customizations. The overall functionality, usability, and flexibility of the OSI solution is far superior to the Alstom solution, and the savings over 5 years are significant.

It is recommended to replace the Alstom solution with the OSI solution in a time frame that accommodates the SPP project and Corporate Separation.

### Associated/Future Projects

This project is necessary to be done in conjunction with the SPP Integrated Marketplace project and the Corporate Separation project in order to achieve the stated goals of those projects.

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	1,627,080	-	1,627,080	1,627,080	-	1,627,080
Outside Services - Labor	650,250	-	650,250	650,250	-	650,250
Outside Services Software	2,439,219	-	2,439,219	2,439,219	-	2,439,219
Material	-	-	-	-	-	-
Other Cost Category	17,899	-	17,899	17,899	-	17,899
Fleet	-	-	-	-	-	-
Fringes/Incentives	756,593	-	756,593	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>5,491,041</b>	<b>-</b>	<b>5,491,041</b>	<b>4,734,448</b>	<b>-</b>	<b>4,734,448</b>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITCOP1312 - ETRM Modernization - TradeBlotter Replacement & Magnum Upgrade -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>The Energy Trading and Risk Management (ETRM) functions for the AEP Commercial Operations and Energy Supply businesses utilize a set of IT and Business Unit developed and supported applications, which were deployed at various points over the past fifteen years and have been patched and modified as business needs have evolved. The primary applications of the suite include TradeBlotter, which provides trade capture functionality, and Magnum, which provides risk management and valuation capabilities. TradeBlotter is the oldest application of the suite and relies on outdated and unsupported technologies including Visual Basic 6 and WebMethods 4.1 but the application does meet most current business needs. While the Magnum application does not have the same technical issues, it does have significant areas of desired business functional changes to meet current and future plans. As a result, a project needs to be undertaken to modernize the ETRM function. After utilizing Gartner Research, a peer study and conducting a request for information (RFI) with 7 respondents, an evaluation team determined the preferred option is to undertake an in-house development effort for the modernization. Because it benefits both regulated jurisdictions and Energy Supply, Energy Supply will fund 50% of the project cost while the remaining 50% will be allocated to regulated operating companies.</p>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">Company</th> <th style="width: 25%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$3,092,600</td> <td>\$3,092,600</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$3,092,600</b></td> <td><b>\$3,092,600</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$3,092,600	\$3,092,600	<b>Total</b>		<b>\$0</b>	<b>\$3,092,600</b>	<b>\$3,092,600</b>																											
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AEPSC	Application Sof	\$0	\$3,092,600	\$3,092,600																																								
<b>Total</b>		<b>\$0</b>	<b>\$3,092,600</b>	<b>\$3,092,600</b>																																								
<b>Cash Flow:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 15%;">Prior Years</th> <th style="width: 15%;">2014</th> <th style="width: 15%;">2015</th> <th style="width: 15%;">Future Years</th> <th style="width: 15%;">Total</th> </tr> </thead> <tbody> <tr> <td>Capital</td> <td>\$0</td> <td>\$1,407,000</td> <td>\$1,685,600</td> <td>\$0</td> <td>\$3,092,600</td> </tr> <tr> <td>Removal</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr style="background-color: yellow;"> <td><b>Total To Be Authorized</b></td> <td><b>\$0</b></td> <td><b>\$1,407,000</b></td> <td><b>\$1,685,600</b></td> <td><b>\$0</b></td> <td><b>\$3,092,600</b></td> </tr> <tr> <td>Less CIAC</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>Net AEP Cash Flow</td> <td>\$0</td> <td>\$1,407,000</td> <td>\$1,685,600</td> <td>\$0</td> <td>\$3,092,600</td> </tr> <tr> <td>Associated O&amp;M</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> </tbody> </table>			Prior Years	2014	2015	Future Years	Total	Capital	\$0	\$1,407,000	\$1,685,600	\$0	\$3,092,600	Removal	\$0	\$0	\$0	\$0	\$0	<b>Total To Be Authorized</b>	<b>\$0</b>	<b>\$1,407,000</b>	<b>\$1,685,600</b>	<b>\$0</b>	<b>\$3,092,600</b>	Less CIAC	\$0	\$0	\$0	\$0	\$0	Net AEP Cash Flow	\$0	\$1,407,000	\$1,685,600	\$0	\$3,092,600	Associated O&M	\$0	\$0	\$0	\$0	\$0
	Prior Years	2014	2015	Future Years	Total																																							
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Associated O&M	\$0	\$0	\$0	\$0	\$0																																							
<b>Project Dates:</b>	<b>Start Date :</b> 03/10/2014 <b>In Service Date :</b> 01/02/2015 <b>Completion Date:</b> 12/31/2015																																											
<b>Regulatory Cost Recovery:</b>	<u>AEP System</u> -- \$1.55M Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction. <u>AEP Energy Inc</u> -- \$1.55M N/A																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 05/12/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$1,058,250	\$1,406,600	\$0	\$2,464,850
	<b>Total</b>	<b>\$0</b>	<b>\$1,058,250</b>	<b>\$1,406,600</b>	<b>\$0</b>	<b>\$2,464,850</b>
<b>Required Signatures:</b>	<b>Status</b>		<b>Name</b>		<b>Date</b>	
	Approved	Stanley J Bundy		05/02/2014		
	Approved	William M Romine		05/02/2014		
	Approved	Nalini D Rupert		05/02/2014		
	Approved	Michael A Rozsa		05/02/2014		
	Approved	Alberto G Ruocco		05/06/2014		
	Approved	Randolph J Ware		05/08/2014		
	Approved	Jenifer L Fischer		05/12/2014		
<b>Project Contacts:</b>	<b>Type</b>		<b>Name</b>			
	Detail Provider	DEMOEN,JEFFREY W				
	Project Manager	ANDRUS,TIMOTHY J				

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>Without modernization or replacement, the systems currently used by AEP for Energy Trading and Risk Management will eventually become unable to meet business needs and the likelihood of a technical failure will increase.</p> <ul style="list-style-type: none"> <li>• Should TradeBlotter fail irrecoverably, the business would need to manually enter deals in Magnum and webTrader.           <ul style="list-style-type: none"> <li>o Manual entry in two systems could lead to errors and increase workload by at least 2 FTEs across the enterprise.</li> <li>o TPM (Trade Position Manager) would not have data to show intra-day positions which could lead to sub-optimal trading decisions.</li> <li>o Significant efforts would be needed to introduce a replacement / workaround and realistically, AEP could only operate in this mode for a few days without introducing unacceptable risk.</li> </ul> </li> <li>• Should TradeBlotter or Magnum become unable to be modified for some reason, the business would require manual workarounds to react to regulatory changes and business opportunities may be missed.</li> <li>• As additional small changes to TradeBlotter and Magnum are applied and the integration layer continues to age, each enhancement will cost more and support costs and the number of production issues will increase. This effort would be to modernize AEP's ETRM suite by replacing TradeBlotter with a new user interface that retains as much of the end user look and feel as possible while addressing all technical issues/risks. Additionally, new functionality will be added to Magnum to better handle current and expected business requirements. A preliminary list of enhancements has been included in the attached ETRM Prioritized Business Enhancements document.</li> </ul>
<b>Other Alternatives Considered:</b>	<p>In addition to performing an in-house modernization, "off the shelf" vendor options and doing nothing were considered.</p> <p>As outlined in the justification section, doing nothing increases risk and would require high cost and error prone manual processes. Further, ongoing expense of the current solution is higher than the proposed solution. Off the shelf vendor options considered included Pioneer Solutions, Allegro Development and Triplepoint Technologies. All the vendor solutions would require either significant customization to meet AEP's needs or AEP would have to modify its business processes, possibly impacting financial performance of the business functions. The cost of implementation and ongoing expense for the full featured products were also significantly higher (3-4 times) than leveraging our in house software and expertise.</p>
<b>Conclusion:</b>	<p>This project will reduce both technical and business risk to the company while enabling lower IT and business expenses.</p>



Date April 17, 2013



Company American Electric Power Service Corporation		CI/LLI/CP/Program Number ITGEN1208		Version 2
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B 5/9 4/17/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	
			Reviewed by CP&B 5/9 4/17/13	
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS	
	P. Vegas	4/10/2013		
	P. Chodak	4/10/2013		
	G. Pauley	4/10/2013		
	C. Patton	4/15/2013		
	T. Light	4/11/2013		
	T. Busby	4/12/2013		
	A. Ruocco	4/15/2013		
1	S. Bundy	5/9 4/17/2013		
	B. A. MacPherson			
2	D. Lynch	5/9 4/18/13		
	L. L. Dieck			
3	C. Zebula	5/9 4/16		
	B. X. Tierney			
	L. M. Barton			
	L.J. Weber			
	M.C. McCullough			
	L. Hillebrand			
	D. E. Welch			
	R. P. Powers			
	Buckeye Power Approval			
	N. K. Akins			
5/4	Cathy Warchal - 28th floor Ext 1347			
		4-24-13 APR 20 13	Approved in PeopleSoft Month Included in Board Package	

Alternate CP&B Contacts:  
 Darryl Lynch - 28th Floor - Ext 1142

Scanned File Name: AEPSC ITGEN1208 Version 2.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 2**

**Project :** ITGEN1208 Revision - IT Application Modifications for AEP Ohio Generation Corporate Separation

1 Riverside Plaza, Columbus, Ohio

**Description:** As part of the AEP Ohio Electric Security Plan (ESP), the Public Utilities Commission of Ohio (PUCO) has mandated that AEP Ohio generation assets will be separated from AEP Ohio regulated assets. Also, AEP Ohio generation assets will become unregulated and separated from the AEP eastern generation power pool. This project will address the Information Technology (IT) applications to support the AEP Ohio Generation function, and lay the foundation for work with other AEP business application areas that will be affected by the Corporate Separation order, particularly Commercial Operations, Generation and other AEP Service Corporation entities. The intent is to provide the least cost, lowest risk solution that provides the affected Business Units (BU's) with the capabilities necessary to achieve corporate separation.

This initial Capital Improvement (CI) is based on a cursory review of the application portfolio which has identified the applications potentially impacted by the AEP Ohio Generation Corporate Separation. Planning activities will determine implementation and infrastructure requirements for this effort, as well as including a more in-depth analysis of affected integrations, BU supported applications and non-application data stores. It is expected that the planning activities will result in a commit level estimate by March of 2013. At that time, if a revision to the CI is required, it will be submitted for approval.

**Reason for Revision:** This project will address the IT and BU applications to support the AEP Ohio Generation function, Wheeling Power / Appalachian Power merger and the East Power Coordination Agreement changes.

The initial CI was for the planning phase only and based on the analysis done in this phase, a CI revision is required for the implementation effort.

**Authorization Amount:**

	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ 791,481	\$ 8,540,518	\$ 9,331,999

**Cash Flow:**

	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ 87,830	\$ 8,316,062	\$ 928,107	\$ -	\$ 9,331,999
<b>Total to be Authorized</b>	\$ 87,830	\$ 8,316,062	\$ 928,107	\$ -	\$ 9,331,999
<b>Associated O&amp;M</b>	\$ 91	\$ 290,937	\$ 200,161	\$ 131,338	\$ 622,527

**Start Date:**

9/1/2012

**Completion Date:**

6/30/2014

**In Service Date:**

6/30/2014

Continued on next page

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 2**

**Project :** ITGEN1208 Revision - IT Application Modifications for AEP Ohio Generation Corporate Separation

1 Riverside Plaza, Columbus, Ohio

Continued from previous page

**Regulatory Cost** East PCA & APCo/WP Merger

**Recovery:** Appalachian Power Company - Generation – \$1.67M (17.9%)  
 > \$0.78M (47%) APCo VA base rate case filing, TYE 12/31/2013, with cost projections through 1/31/2016, effective 1/31/2015.  
 > \$0.72M (43%) APCo WV base rate case filing, TYE 12/31/2013, with cost projections through 12/31/2014, effective 2/1/2015.  
 > \$0.10M (6%) KgPCo purchased power pass-through from APCo under three-year settlement agreement phase-in of generation rates through 12/31/11 remains in effect post-2011 until new agreement is in place.  
 > \$0.07M (4%) FERC Annual Formula Rate update, TYE 12/31/2014, effective 6/1/2015.

Appalachian Power Company Distribution - \$0.45M (4.8%)  
 APCo WV base rate case filing, TYE 12/31/2013, with cost projections through 12/31/2014, effective 2/1/2015.

Appalachian Power Company - Transmission - \$0.29M (3.1%)  
 Costs will be included in the PJM OATT annual formula rate filings (East Operating Companies OATT and East Transmission Companies OATT) effective the year the assets are projected to be placed in-service. Through PJM, these costs will be billed to the AEP LSE (East OPCos) and wholesale customers in the AEP Zone. Jurisdictional OATT pass-through mechanisms are currently in place for 68% of the PJM annual transmission revenue requirement, including portions allocated to retail customers in OPCO, APCo VA, I&M MI, Kingsport and to all wholesale customers. Costs will continue to be recovered through base rate cases in I&M IN, KPCo, APCO WV, WPCo and other jurisdictions if pass-throughs are not approved.

Indiana Michigan Power Company – \$0.44M (4.7%)  
 > \$0.29M (66%) I&M IN base rate case filing; Projected TYE 12/31/2012, effective 6/1/2014 (using State of IN Minimum Filing Requirements).  
 > \$0.06M (14%) I&M MI base rate case filing, TYE 12/31/2012 with projections through 12/31/2014, effective 2/1/2014 (interim rates if no settlement)  
 > \$0.09M (20%) FERC Annual Formula Rate update, TYE 12/31/2014, effective 6/1/2015.

Kentucky Power Company – \$0.13M (1.4%)  
 > \$0.12M (92%) base rate case filing, TYE TBD, effective TBD.  
 > \$0.01M (8%) FERC Annual Formula Rate update, TYE 12/31/2014, effective 6/1/2015

Ohio Corporate Separation

Ohio Power Company – \$6.35M (68.0%)  
 > \$6.10M (96%) Upon approval from State and Federal regulatory authorities, Ohio Power Company's generation fleet will transition into a competitive market. Currently, base generation revenues authorized by the PUCO (approved in August 2012 Modified ESP II) are not cost-of-service based, so there is no incremental cost recovery mechanism for new capital investments. As such, new investment carrying costs are deemed a cost of business offsetting ESP authorized revenues.  
 > \$0.25M (4%) Allocated to WPCo and recovered in current demand charge effective 1/1/10

<b>Funding:</b>	Included in IRC Presentation	Yes	Project Funded	Yes	Offset Source	N/A
<i>Requested future year funds are included in the last official Forecast.</i>						

**Approved By:** Ruocco/East Opco Presidents/Zebula/Light **Approved On:** 4/18/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	791,481	-	791,481
This Submission	8,540,518	-	8,540,518
<b>Total</b>	<b>\$ 9,331,999</b>	<b>\$ -</b>	<b>\$ 9,331,999</b>



**2013 Direct Cost Budget Funding**

**Budget Offset Source and Amount**

In Budget	\$	6,337,877	<i>(If budget offset, provide Opco, BU, Project ID, \$'s)</i>
Budget Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	4/15/2013
amt ≤ \$ 10m	East Operating Company Presidents	Pablo Vegas	See electronic approval attached	4/10/13 - 4/15/13
amt ≤ \$ 20m	EVP Energy Supply	Chuck Zebula		4/18
amt ≤ \$ 10m	SVP Fuel, Emissions & Logistics	Tim Light	See electronic approval attached	4/11/2013
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		4/18/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Dick Mills	220-6710
Requisition Detail Provider	Stan Bundy	200-3924

4/15/2013

## Capital Improvement Approval Requisition

### Project Justification

#### Reason for Revision:

This project will address the IT and BU applications to support the AEP Ohio Generation function, Wheeling Power / Appalachian Power merger and the East Power Coordination Agreement changes. The initial CI was for the planning phase only and based on the analysis done in this phase, a CI revision is required for the implementation effort.

Corporate separation is a requirement of the Public Utilities Commission of Ohio (PUCO) approved AEP Ohio Electric Security Plan (ESP). Based on that plan, AEP has filed for Federal Energy Regulatory Commission (FERC) approval to achieve corporate separation of the Ohio Power generation and marketing businesses, to terminate the current Interconnection Agreement, and to merge Wheeling Power into Appalachian Power.

IT and the Business Units (BU's) have worked together to identify the IT systems impacted by Ohio Generation Corporate Separation. Application requirements have been documented and reviewed with stakeholders and proposed solutions have been determined and estimated.

This project will address Commercial Operations, Generation, Transmission, Utilities and Corporate business applications to implement the three scope areas across the organization.

The breakdown of costs in this CI by scope area is as follows:

#### Ohio Generation Corporate Separation

The estimated fully loaded capital costs associated with the Ohio Generation Corporate Separation are: \$87,830 in 2012; \$5,713,950 in 2013; and \$545,073 in 2014.

#### New Power Coordination Agreement

AEP has filed with FERC to terminate its current East Operating Agreement. The East Operating Agreement provided the terms and conditions for the east operating companies (Appalachian Power, Kentucky Power, Indiana Michigan Power and Ohio Power) to share and settle capacity and energy among the four east operating companies, largely based on a member load ratio and an energy cost reconstruction process. AEP has filed a Power Coordination Agreement with FERC. This change will require each company to have a stand-alone energy cost reconstruction process. This will require significant system modifications to properly execute the reconstruction process along with any other transactions defined in the agreement. The estimated fully loaded capital costs associated with the Power Coordination agreement are: \$1,292,508 in 2013; and \$195,567 in 2014.

#### Merger of Wheeling Power into Appalachian Power

AEP has filed with FERC and the appropriate state regulatory agencies to merge Wheeling Power into Appalachian Power. The estimated fully loaded capital costs associated with the merger are: \$1,309,604 in 2013; and \$187,467 in 2014.

#### Corporate Separation O&M Expense Summary

IT will incur O&M expenses in support of the overall program. This includes the annual costs for the hardware that will be allocated to the new instances of a few applications for both Commercial Operations and Generation along with the infrastructure labor associated with this work. There is also some O&M labor to support the data conversions needed to support the merger of Wheeling into APCO.

### Other Alternatives Considered

During the planning phase, IT worked with application owners to determine requirements and a proposed solution. These business case solutions for each application have been reviewed with Business Unit stakeholders and management. Solutions include physical and logical application separation.

Since separation has been mandated via the ESP and Corporate Separation orders, not performing these activities is not a viable business alternative.

## Capital Improvement Approval Requisition

### Conclusion

Based on the Ohio order and deregulation law and the FERC filings, AEP will need modifications to its IT applications to support its business and operational functions.

### Associated/Future Projects

None

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	4,278,043	519,977	4,798,020	4,278,043	519,977	4,798,020
Outside Services - Labor	1,759,733	29,000	1,788,733	1,759,733	29,000	1,788,733
Outside Services Software	439,920	-	439,920	439,920	-	439,920
Material	-	-	-	-	-	-
Other Cost Category	68,599	7,920	76,519	68,599	7,920	76,519
Fleet	-	-	-	-	-	-
Fringes/Incentives	1,987,017	241,790	2,228,807	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>8,533,312</b>	<b>798,687</b>	<b>9,331,999</b>	<b>6,546,295</b>	<b>556,897</b>	<b>7,103,192</b>

Date May 10, 2013



Company American Electric Power Service Corporation		CI/LI/CP/Program Number ITGEN1250	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B <i>SB 5/10/13</i>	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.
		Reviewed by CP&B <i>SB 5/10/13</i>	
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	5/8/2013	
	D. Lee	5/7/2013	
1	S. Bundy	<i>SB</i> 5/10/2013	
	B. A. MacPherson		
2	D. Lynch	<i>DL</i> 5/14/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Cathy Warchal - 28th floor Ext 1347		
		<i>5-20-13</i>	Approved in PeopleSoft
		<i>May 2013</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITGEN1250.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITGEN1250 Generation Corrective Preventative Action Application Replacement  
 1 Riverside Plaza, Columbus, OH

**Description:** With the business objective to drive continuous improvement, mitigate risk and avoid cost, streamline business processes, ensure sustainable conformance to standards and improve productivity, Generation has had a Corrective / Preventative / Nonconformance / Lessons learned program based on ISO 9001. To support this effort Generation used two applications: Corrective Preventative Action Request (CPAR) and GAPs. These two applications will be replaced with a new solution based on RSA Archer.

The CPAR and GAPs problem statement:

- CPAR application is based on Lotus Notes technology which is to be retired
- Applications modifications not easily performed to keep them current
- Applications have very basic automation for notifications and approvals
- Applications have minimal action item functionality needed to assure assignment completions
- Applications do not support basic dash boards and have minimal metrics that can be used to track activity
- Applications contain very basic search and data manipulation functions
- Applications use primarily text fields which results in hit or miss categorization and classification of events and minimal search / sort capability
- Application workflows must be driven by users and reports must be requested
- GAPs application must be modified for Ohio Generation Corporate Separation

Project Benefits

Total CPAR Type 2 Benefits - \$636,000 per year in productivity and cost avoidance

Total GAPS Type 2 Benefits - \$250,000 per year in productivity and cost avoidance

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 440,200	\$ 440,200

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 440,200	\$ -	\$ -	\$ 440,200
<b>Total to be Authorized</b>	\$ -	\$ 440,200	\$ -	\$ -	\$ 440,200
<b>Net AEP Cash Flow</b>	\$ -	\$ 440,200	\$ -	\$ -	\$ 440,200
<b>Associated O&amp;M</b>	\$ -	\$ 29,520	\$ -	\$ -	\$ 29,520

**Start Date:** 5/1/2013      **Completion Date:** 12/31/2013      **In Service Date:** 10/31/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** Included in IRC Presentation  Yes  Project Funded  Yes  Offset Source  N/A

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/D. Lee

**Approved On:** 5/8/2013



## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	440,200	-	440,200
<b>Total</b>	<b>\$ 440,200</b>	<b>\$ -</b>	<b>\$ 440,200</b>


**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$	347,200	<i>(If offset, provide Opco, BU, Project ID, \$'s)</i>
Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	05/08/13
amt ≤ \$ 10m	VP Fleet Operations	Daniel Lee	See electronic approval attached	05/07/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		5/14/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Dan Kohler	200-1619
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

The proposed solution will provide the following benefits.

The CPAR replacement benefits is based on Engineering, Project & Field Services' average annual major project capital spend through 2015 of \$667 Million:

- Improved productivity in data mining of Lessons Learned, including project initiation reviews
- Process improvement to the current Nonconformity Process
- Presently Non-conformances (NCR) generated and closed in multiple systems managed by AEP and/or AE/Constructor
- New solution will provide common platform for all NCR's and increase productivity by reducing duplicate work.
- Cost Avoidance related to current Nonconformity Process
- Due to the multiple Non-conformance systems, swift resolution does not always occur and results in rework or extra cost in expediting. Recognizing trends and extent of conditions in the existing CPAR application is difficult.
- Annual process/quality improvement, Human Performance Improvement (HPI) error reduction, and increased labor efficiency equal to 1% of annual project spend yields a \$667K benefit. An internal study identified approximately \$636K benefit vis-à-vis reduction of repeat events.
- Total CPAR Type 2 Benefits - \$636,000 per year in productivity and cost avoidance

For GAPS replacement

- Improved productivity in event trending  
Developing event trends in the existing GAPS application begins with a manual import of data from GAPS into Excel which is time consuming, has minimal optionality, and only serves as a data snapshot at the time the data was extracted. As a result, meaningful trends are rarely found. Earlier recognition of event trends will enable generating units to pro-actively address potential events before they occur which will reduce the number of forced unit outages and minimize damage to impacted equipment. For example we have had several hydraulic leaks across the system that have caused forced unit outages. The source of these events has been addressed but if this trend had been recognized earlier, several forced unit outages could have been avoided. Based on the avoidance of 1 forced outage every two years at an average cost of around \$100,000 per outage, the cost avoidance is \$50,000 per year.
- Elimination of repeat occurrences  
Addressing the causes of events at plants to eliminate repeat occurrences is an important part of GAPS. The present system does not have a good system to generate action items and track their completion. The new system will do this and be able to keep a running total of action items not completed. There is an estimated minimum value of \$50,000 per year in rework avoidance including parts and labor.
- Communication of process improvements  
The communication of events and their cause analysis that occur among similar fleet units will reduce the total number of events by providing each plant the knowledge to pro-actively address the causes leading up to the event. In order for this to happen, each event, that has potential impacts at other plants, must be communicated with recommendations as to avoid the event and an acknowledgement that action has been taken must be received. There will be a two fold payback here. The first will be an avoidance of forced outages assuming 1 per year at \$100,000 per outage, the cost avoidance is \$100,000 per year and the second will be pro-actively addressing the causes of events that will minimize costs related with equipment repair. This will equate to around \$50,000 per year. Total cost avoidance will be around \$150,000 per year.
- Avoided cost of modifying the existing GAPS application to accommodate Ohio Generation Corporate Separation  
Estimate for GAPS modifications is \$30,000
- Total GAPS Type 2 Benefits - \$250,000 per year in productivity and cost avoidance

## Capital Improvement Approval Requisition

### Project Justification (Continued)

Other intangible benefits include:

- Consolidates user experience to one easy to use application
- Common data (picklists) used across Generation Engineering, Projects & Construction, Field Services and Operations
- Consolidates Generation Corrective, Preventative, Nonconformity and Lessons learned into one application
- Dashboards / Reporting can show trends across Generation
- Retires CPAR and GAPs applications

### Other Alternatives Considered

The RSA Archer solution was selected with a cross functional team using the software selection process including a Request for Proposal (RFP). Other vendors considered were: Ventyx, Intellex, DevonWay, and CMO Compliance. Of course, Generation could continue to use their existing applications. This alternative will not solve the problem statement nor provide the additional benefits outlined in the business case.

### Conclusion

Based on the project justification and the other alternative considered, Generation should move forward with this application replacement of CPAR and GAPs with RSA Archer.

### Associated/Future Projects

Other Business units have expressed interest in the RSA Archer solution to address their corrective / preventative action programs in the future. These Business units include Transmission and Environmental, Safety & Health and would be separate projects (Capital Improvements) in the future.

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	100,000	100,000	200,000	100,000	100,000	200,000
Outside Services - Labor	145,000	-	145,000	145,000	-	145,000
Outside Services Software	-	-	-	-	-	-
Material	-	-	-	-	-	-
Other Cost Category	1,100	1,100	2,200	1,100	1,100	2,200
Fleet	-	-	-	-	-	-
Fringes/Incentives	46,500	46,500	93,000	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>292,600</b>	<b>147,600</b>	<b>440,200</b>	<b>246,100</b>	<b>101,100</b>	<b>347,200</b>

Date June 14, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITGEN1252	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 6/14/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 6/14/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	6/7/2013	
	D. Lee	6/7/2013	
1	S. Bundy	SB 6/14/2013	
	B. A. MacPherson		
2	D. Lynch	DL 6/17/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Cathy Warchal - 28th floor Ext 1347		
		6-24-13	Approved in PeopleSoft
		JUNE 2013	Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITGEN1252.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITGEN1252 Generation Monitoring Diagnostics Software  
 1 Riverside Plaza, Columbus, Ohio

**Description:** This project will purchase and implement Advanced Pattern Recognition (APR) Software which can detect equipment operation anomalies to reduce failures and minimize the potential for resulting catastrophic events. At present, our generating units do not have a real-time continuous monitoring system in place that can detect long term equipment degradation. Based on this situation, the business imperative is:

- Plant equipment is generally placed in-service and monitored periodically by plant operators on a scheduled basis (monthly or quarterly) by the predictive maintenance analyst in an effort to catch equipment degradation before it causes the failure of the equipment.
- The operating characteristics of plant equipment within design basis performance metrics could change before a plant operator or the predictive maintenance analyst could detect an anomaly.
- Sooner or later, even properly maintained equipment will fail and as the service life of generating units increases, the frequency of failure would also be expected to grow.
- The timing of equipment failures can have a significant impact on unit/plant/ availability and capacity
- Unit/equipment outages caused by such untimely failures can result in longer outages due to possible delays in acquiring parts and labor which can result in higher costs
- Distributed Control System management is progressing toward a more effective alarm system and the APR software will support this migration by detection of abnormalities in equipment operating characteristics in real-time.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 1,348,050	\$ 1,348,050

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,348,050	\$ -	\$ -	\$ 1,348,050
<b>Total to be Authorized</b>	\$ -	\$ 1,348,050	\$ -	\$ -	\$ 1,348,050
<b>Associated O&amp;M</b>	\$ -	\$ 2,952	\$ -	\$ -	\$ 2,952

**Start Date:** 6/10/2013      **Completion Date:** 11/30/2013      **In Service Date:** 8/9/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** Included in IRC Presentation N/A      Project Funded Yes      Offset Source N/A  
*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/D. Lee

**Approved On:** 6/7/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	1,348,050	-	1,348,050
<b>Total</b>	<b>\$ 1,348,050</b>	<b>\$ -</b>	<b>\$ 1,348,050</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ 1,317,987	<i>(If offset, provide Opco, BU, Project ID, \$'s)</i>
Offset	\$ -	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	
amt ≤ \$ 10m	VP Fleet Operations	Daniel Lee	See electronic approval attached	
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		

**Project Contacts**

Contact	Name	Telephone
Project Manager	John Grimm	200-2751
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

This project will support the creation of a Generation Fleet-wide Monitoring and Diagnostic Center. Advanced Pattern Recognition (APR) Software can detect equipment operating anomalies that could reduce equipment failures and minimize catastrophic events through continuous real-time monitoring of equipment data.

APR software is used to create analytical models of power plant equipment that predicts equipment normal operation based on historical data taken from the plants existing PI historian. When the real-time data varies from the predicted value, the software will alarm indicating an anomaly. This allows for much earlier detection of possible equipment degradation.

InStep PRiSM software was selected via a request for proposal process and integrates with the plants existing Plant Information (PI) historian. InStep customers include Duke/Progress Energy, Southern Company, Tennessee Valley Authority (TVA), WE Energies, EDF Energy, Eskom, Florida Power and Light (FPL), Georgia System Operations Corporation (GSOC), and National Grid UK. InStep PRiSM is currently the industry leader monitoring over 140,000 MW of generation capacity.

Monitoring & Diagnostic Centers are being effectively utilized to achieve the stated goals at other utilities. Duke / Progress Energy provided AEP with the following representative benefit examples resulting from using the PRiSM APR software at their Monitoring & Diagnostic center (estimated avoided costs include lost generation and equipment repair based on a catastrophic failure):

#### Mayo Lake Plant – Low Pressure Turbine

- Unit was started after an outage
- Vibration step change occurred on LP turbine that was well below alarm levels
- Engineering and plant were notified
- Vibration data collected and unit removed for inspection
- Bolts on lower half of flow sleeve broke and sleeve contacted L-0 blades
- Minor damage was found and L-0 blades repaired
- Avoided blade failure and associated damage to multiple stages of blades, packing, and diaphragms
- Estimated avoided cost - \$4.1M

#### Darlington Combined Cycle Plant (Gas Turbine)

- Blade Path temperature spread increased due to early progression of a transition piece failure
- APR models have detected 3 additional failures on other units prior to turbine damage
- Detection prevented piece from liberating and damaging turbine (a unit at an unmonitored site had extensive damage to the turbine with the same failure)
- Avoided Cost: - \$1.5M

Detecting equipment degradation as it occurs allows for:

- Lower repair costs and improved equipment reliability
- Maximizing generation output by catching equipment operating anomalies before a major failure can occur thus reducing Forced Outages
- Improved operational excellence through knowledge capture and information sharing as allowed throughout the AEP fleet

## Capital Improvement Approval Requisition

### Other Alternatives Considered

The InStep PRISM solution was selected by a cross-functional team using the software selection process that included a Request for Proposal (RFP). Other vendors considered were: Scientech, General Electric Smart Signal, Cassantech, and Black & Veatch. The default alternative for Generation would be to "do nothing," but this alternative does not provide a solution for the problem statement nor the benefits of establishing a Monitoring & Diagnostic Center.

### Conclusion

Based on the project justification and the other alternative considered, Generation should move forward with this project.

### Associated/Future Projects

None

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	28,650	36,000	64,650	28,650	36,000	64,650
Outside Services - Labor	25,000	-	25,000	25,000	-	25,000
Outside Services Software	-	1,227,625	1,227,625	-	1,227,625	1,227,625
Material	-	-	-	-	-	-
Other Cost Category	316	396	712	316	396	712
Fleet	-	-	-	-	-	-
Fringes/Incentives	13,323	16,740	30,063	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>67,289</b>	<b>1,280,761</b>	<b>1,348,050</b>	<b>53,966</b>	<b>1,264,021</b>	<b>1,317,987</b>



## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITPFP1327 - PowerPlant 10.4 Upgrade -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>In 2009 AEP elected to change its tax accounting method for deducting repairs on its generation fleet based upon interpretation of court cases and IRS rulings. AEP deducted \$1.3 billion in repairs previously capitalized when tax followed the book method of capitalization. In general, most costs to repair the generation fleet are now deductible for tax and the only costs capitalized for tax, include:</p> <ul style="list-style-type: none"> <li>• Plant additions (i.e. Turk or Rockport DSI)</li> <li>• Substantial replacement of components or retirement units (i.e. replace turbine)</li> <li>• Improvements (i.e. projects that increase capacity or extend plant life).</li> </ul> <p>The IRS issued final repairs regulations in 2012. The regulations require that any accounting changes elected prior to the issuance of the regulations must be updated for 2014 in order to gain the protection of the safe harbor rules. Now, AEP has chosen to apply this same tax accounting methodology for deducting repairs on Transmission and Distribution assets to be implemented in 2015. This will require an upgrade to the PowerPlant information system in order to utilize circuit level detail for the repairs being completed by Transmission and Distribution. The level of data required to manage tax repairs for these organizations is significantly higher than what has been required for Generation Tax Repairs and has been implemented in a new module within PowerPlant 10.4.</p>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">Company</th> <th style="width: 25%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$3,035,265</td> <td>\$3,035,265</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$3,035,265</b></td> <td><b>\$3,035,265</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$3,035,265	\$3,035,265	<b>Total</b>		<b>\$0</b>	<b>\$3,035,265</b>	<b>\$3,035,265</b>																											
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Associated O&M	\$0	\$0	\$176,172	\$293,304	\$469,476																																							
<b>Project Dates:</b>	<b>Start Date :</b> 08/01/2014 <b>In Service Date :</b> 08/31/2015 <b>Completion Date:</b> 09/30/2015																																											
<b>Regulatory Cost Recovery:</b>	<u>AEP System</u> -- \$3.0M (100%) Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 09/14/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$1,205,912	\$1,631,782	\$0	\$2,837,694
	<b>Total</b>	<b>\$0</b>	<b>\$1,205,912</b>	<b>\$1,631,782</b>	<b>\$0</b>	<b>\$2,837,694</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
	Approved		Stanley J Bundy	09/09/2014
	Approved		Christopher K Duffy	09/10/2014
	Approved		Michael A Rozsa	09/10/2014
	Approved		Alberto G Ruocco	09/10/2014
	Approved		Randolph J Ware	09/11/2014
	Approved		Alesia A Austin	09/14/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
	Detail Provider		MAHOOD,LORI L
	Project Manager		BORLAZA,GILBERT M

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>New IRS Repairs Regulations:</p> <ul style="list-style-type: none"> <li>• AEP elected to change its tax accounting method for deducting generation repairs in 2009; Same method to be applied for Transmission and Distribution assets.</li> <li>• New repairs regulations require that changes elected prior to issuance of regulations must be updated for 2014.</li> </ul> <p>PowerPlant 10.2 Retirement</p> <ul style="list-style-type: none"> <li>• PowerPlan will retire PowerPlant v10.2 (currently in use at AEP) at the end of 2014.</li> <li>• Fixes or maintenance releases will no longer be provided by PowerPlan unless upgrade to v10.4 is completed.</li> </ul> <p>Financial Benefits</p> <ul style="list-style-type: none"> <li>• One-time tax cash flow benefit of \$210M to \$280M in 2015 (est).</li> <li>• Annual tax cash flow benefit of \$90M to \$100M starting in 2015.</li> </ul> <p>Business Benefits</p> <ul style="list-style-type: none"> <li>• Improved controls for Tax and Accounting.</li> <li>• Increased efficiency by eliminating manual effort.</li> <li>• Reduced error risk by automating calculations.</li> </ul> <p>Technology Benefits</p> <ul style="list-style-type: none"> <li>• Upgrades PowerPlant to newest version with full vendor support.</li> <li>• Moves custom interfaces to a standard platform (Java) thus reducing AEP's reliance on costly vendor support.</li> </ul>
<b>Other Alternatives Considered:</b>	<ol style="list-style-type: none"> <li>1. Do nothing - Although this option has the benefit of least cost, it is not viable. If PowerPlant is not upgraded the system will no longer be supported by the vendor and AEP will be unable to obtain tax cash flow advantages of utilizing the Tax Repairs module for Transmission and Distribution.</li> <li>2. Replace PowerPlant with a different technology solution. There are no products in the market that are viable in the public utility business. No other applications are competitive with PowerPlant in today's market.</li> <li>3. Develop in-house tax repairs program in lieu of implementing Tax Repairs module and upgrading PowerPlant 10.2. Solution would require extensive manual work, including four new FTEs (two in Tax, one in Transmission, and one in Distribution). An annual tax study must be completed by an external entity and an in-house repairs tracking system must be developed. PowerPlan support would still be required (outside of maintenance agreement for v10.2) after 12/31/2014.</li> </ol>
<b>Conclusion:</b>	<p>In conclusion, the project team recommends the following scope:</p> <ul style="list-style-type: none"> <li>• Upgrade from version 10.2.1 to 10.4.3 for Property Accounting, Property Tax, Provision, PowerTax, and Lease Accounting.</li> <li>• Convert existing custom PowerBuilder interfaces to Java.</li> <li>• Implement new Tax Repairs module to assess Transmission and Distribution repairs for maximum tax benefit.</li> <li>• Implement new Asset Analytics module to measure retirement process effectiveness and identify data anomalies.</li> </ul>



Date October 7, 2011

<b>Company</b> American Electric Power Service Corporation	<b>CI/LI/CP/Program Number</b> ITSSV0904	<b>Version</b> 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B <i>JLF</i> <i>10-7-11</i>	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B <i>JLF</i> <i>10-7-11</i>

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	<i>DLF</i> 10/10/11	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	L. Barton		
	L.J. Weber		
	N. K. Akins		
	M.C. McCullough		
	B. D. Radous		
	D. E. Welch		
	R. P. Powers		
	C. L. English		
	Buckeye Power Approval		
	M. G. Morris		
2	Jenifer Fischer - 28th floor Ext 3032		
		<i>10-25-11</i>	Approved in PeopleSoft
		<i>Oct 2011</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Cathy Warchal - 28th Floor - Ext 1347

Scanned File Name: AEPSC ITSSV0904.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITSSV0904 - Integration Modernization and Consolidation Program  
 1 Riverside Plaza, Columbus, OH

**Description:** The Integration Modernization and Consolidation Program will restore AEP's platform for doing system integrations and business-to-business (B2B) electronic transactions to a vendor supported version and current industry standards, and will allow consolidation of these capabilities onto a single enterprise platform.

Monthly, billions of dollars of AEP's financial activity and millions of operational transactions rely on this platform. The 6.1 and 6.5 versions of the webMethods platform have been in production for 8 years and 6 years, respectively, and are no longer sustainable in terms of security capabilities, vendor support, functionality, and usability.

Upgrade and consolidation will include the following:

- Stand up version 8.2 of webMethods / Trading Networks
- Retire Gentran (unsupported vendor Electronic Data Interchange (EDI) platform)
- Move Transactions from webMethods 6.5 to New 8.2 Environment
- B2B FTP Framework Upgrade
- webMethods 8.2 Training for infrastructure and applications support teams

**Authorization Amount:**

	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 2,387,689	\$ 2,387,689

**Cash Flow:**

	Prior Years	2011	2012	Future Years	Total
<b>Capital</b>	\$ -	\$ 707,873	\$ 1,679,816	\$ -	\$ 2,387,689
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 707,873	\$ 1,679,816	\$ -	\$ 2,387,689
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Start Date:** 4/1/2011

**Completion Date:** 12/31/2012

**In Service Date:** 12/31/2012

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Approved By:** P. Vegas

**Approved On:** 10/04/2011

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	2,387,689	-	2,387,689
<b>Total</b>	<b>\$ 2,387,689</b>	<b>\$ -</b>	<b>\$ 2,387,689</b>

**2011 Direct Cost Budget Funding**

**Budget Offset Source and Amount**

In Budget	\$	631,673	<i>(If budget offset, provide Opco, BU, Project ID, \$'s)</i>
Budget Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Vegas, P.	See electronic approval attached	10/4/2011
CP&B Review	Manager, Capital & Lease Improvements	Lynch, D.	<i>D Lynch</i>	10/16/11

**Project Contacts**

Contact	Name	Telephone
Project Manager	Tracy Whalen	200-6730
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

#### Security

- Brings integration platform up to compliance with current industry & internal security standards and to level required to conduct business electronically with counterparties who require latest security (i.e. Texas Smart Meter Portal and SPP)
- Removes need for current security exemption: Exemption in place due to requirement of manual intervention of files
- New Broker Security & Architecture: Currently the webMethods Broker does not have built in security layer. In webMethods 8.0 Broker Security is built-in. webMethods 8 broker also brings us up to industry standards for messaging exchange throughout the enterprise.
- In the current webMethods 6.5 environment we are not in compliance with industry security standards for Transport Level Security (TLS) protocol.

#### Consolidation on webMethods 8.2 as AEP's Enterprise Integration Platform

- Retirement of Gentran platform
- Enables retirement of obsolete hardware and software, and fewer environments to maintain
- Essential to ability to support increasing number of integrations with static/eroding headcount

#### Foundational step to achieve High Availability objectives

- Technical limitations of current webMethods versions eliminated (previously roadblock to HADC)

#### Achieve Ongoing O&M Savings

- Removal of Gentran (saves \$24,135 annual maintenance fee)
- Oracle Extended Support (\$11,606 annually for old webMethods environment)
- Infrastructure Savings on removal of obsolete HW/SW (\$110,000 annual HW and SW maintenance)

#### Avoid investment in alternative solutions / additional opportunities for O&M Savings

- Had to purchase DataPower tool for Smart Meter Texas Portal (\$400,000 capital, \$16,000 annually)
- Oracle Cost for gridSMART (\$17,100 Capital, \$9,670 annually if gridSMART moved to WM 8.2)
- User Enablement, Satisfaction - ability for users to monitor their transactions, resubmit failures

#### Efficiency

- Simplify and automate deployments

#### Risk Remediation / Sustainability:

- **Transactions reside on unsupported software**
  - Gentran and WebMethods 6.1 are no longer supported by the vendor
- **Inability to lifecycle servers**
  - Gentran currently runs on AIX5.3 and once hardware is recycled, AIX will be upgraded to 6.1 and Gentran is not supported and is untested on that version of AIX
- **Future Upgrades**
  - Based on the implementation approach and vendor recommendation the future upgrades are expected to be in-place and lower cost and lower risk (based on strategy to stay current).
- **Financial Transactions at risk**
  - Failure of the system results in AEP cutting paper checks. It will slow the process of determining the company's cash position, and therefore impact whether we can receive discounts from the banks in a timely manner.

## Capital Improvement Approval Requisition

### Other Alternatives Considered

**Doing Nothing- In addition to putting AEP at a financial risk, this option also causes:**

- Increased Cost
  - Oracle Extended Support
  - Cost of licensing for Gentran
- Multiple technologies and platforms to support – File Transfer Protocol, Gentran, multiple versions of webMethods.
- Non-compliance with security standards – Transport Level Security for Secure Sockets Layer and Security Assertion Markup Language - based security & Broker Security
- Reduced Sustainability
  - Increased restart times for Integration Servers
  - No vendor support for problem resolution and remediation
  - Incompatibility with new versions of operating systems, Java and Database.

**Option 2- Rip & Replace – This option causes:**

- Multiple Integrations Technologies and Platforms (webMethods may still be needed to support Enterprise Web Service Management)
- Additional Training costs of the new technology
- Incremental ongoing O&M with potential increase in headcount to support the new environment
- Investment costs
  - Product Selection and Installation
  - Infrastructure Design and Deployment
  - Rebuild 350+ integrations in a new environment
- Additional customer involvement for new interfaces is anticipated
- Additional annual maintenance cost for vendor product (expected higher than current)

**Option 3- Upgrade and Consolidate (recommended) - The benefits of this option are:**

- Come up to the latest industry standards
- Analyst recommended (Leader in Gartner's Magic Quadrant and Highest on Forrester Wave)
- Sustainability
  - Supported platform and vendor support for all the infrastructure components
  - Consolidated technologies under the single platform (Get rid of Gentran, FTPServ, webMethods 6.1, 6.5)
- No major training expense and No incremental increase in O&M costs and FTE to support the platform
- Reduced complexity through consolidation of technologies
- Low customer involvement and risk of disruptions
- Familiarity in place for new functionality
- Product is available and ready to use now!
- Customer familiarity with current user interfaces (No additional training costs)
- Decreased future upgrade costs due to in-place upgrades
- Support for an Active-Active Broker to support High Availability

### Conclusion

Millions of dollars of AEP's financial transactions reside on unsupported versions of software. The team recommends Sponsor approval to secure budget and proceed with this and other projects that will enable AEP to stand up a supported version of webMethods and migrate all transactions to this stable environment.

### Associated/Future Projects

ITSSV1092 Infrastructure for Integration Modernization.



## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	879,870	-	879,870	879,870	-	879,870
Outside Services - Labor	648,000	-	648,000	648,000	-	648,000
Outside Services Software	441,000	-	441,000	441,000	-	441,000
Material	-	-	-	-	-	-
Other Cost Category	9,679	-	9,679	9,679	-	9,679
Fleet	-	-	-	-	-	-
Fringes/Incentives	409,140	-	409,140	-	-	-
<b><i>Total Capital Costs</i></b>	<b>2,387,689</b>	<b>-</b>	<b>2,387,689</b>	<b>1,978,549</b>	<b>-</b>	<b>1,978,549</b>

Date December 9, 2012



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1072	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B <i>JLF</i> <i>12-9-12</i>	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B <i>JLF</i> <i>12-9-12</i>

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	<i>DML</i> 12/12/12	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	B. D. Radous		
	S. Burge		
	L.J. Weber		
	M. C. McCullough		
	D. E. Welch		
	R. P. Powers		
	L. Barton		
	Buckeye Power Approval		
	N. K. Akins		
2	Jenifer Fischer - 28th floor Ext 3032		
		<i>12-13-12</i>	Approved in PeopleSoft
		<i>Dec 2012</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Cathy Warchal - 28th Floor - Ext 1347

Scanned File Name: AEPSC ITSSV1072.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation Version 1

**Project :** ITSSV1072 - Governance, Risk and Compliance Enterprise Platform  
 1 Riverside Plaza, Columbus, OH

**Description:** AEP currently does not have a centralized platform for managing and reporting security (physical & cyber) risks. This project will establish an enterprise wide security risk management platform that can be leveraged by a wide range of Business Unit (BU) functions to reposition AEP to enable efficient and automated security risk management processes and reporting, and risk accountability.

**Business Imperative:**

- > Physical Security, Cyber Security, Regulatory Services and Information Technology (IT) compliance teams can significantly improve their efficiency and effectiveness by implementing uniform process improvements coupled with a risk management technology platform deployed across the enterprise.
- > North American Electric Reliability Corporation (NERC) is shifting its focus to internal controls-based audits in the future. NERC has indicated that it intends to take a risk-based approach and will begin evaluating programs' preventative, detective and corrective controls in the future. No platform currently exists for AEP NERC teams to use to meet this need.
- > The process improvements will improve the team's ability to assess, track, manage, and streamline reporting of security risk issues (both internal and for external vendors) in a unified platform.
- > No efficient security risk register exists to communicate emerging security risk to leadership or Risk Oversight.

**Process Solution:**

Centralize and transform independent and siloed security and NERC regulatory processes which currently use a wide range of diverse systems into an enterprise, industry leading, security risk management solution with a wide range of capabilities that can be leveraged by cross-functional BUs. The RSA Archer suite of modules will enable an enterprise foundation for centralized and out of the box security risk management processes.

The NERC compliance BUs will be the first function to transform from their current labor intensive historical-looking compliance reporting to a new forward looking regulatory controls-based program.

IT Aviation and Security will also convert all of their legacy security processes into the Archer suite's processes for Policy, Incident, Threat, Risk assessment, Business continuity, and Vendor risk assessment modules. Security risk controls can be streamlined into a single set of AEP controls, eliminating current duplicative controls. All of the identified security risks can then be documented, approved, and reported to BU and Executive management in the Security Risk Register module. This existing platform and capabilities can also be utilized/leveraged for other related risk, compliance and work flow processes identified at a later time but centralized into a single suite of capabilities.

**Justification:**

Type 1 Return On Investment (ROI)(Direct costs) is Net Present Value (NPV) = -\$2.9 million with 10 years payback.

Combined Type 1 ROI (Direct costs) and Type 2 ROI (Indirect Costs) is NPV = \$1.6 million with 3.2 years payback.

It is estimated that the cost of establishing a NERC internal controls-based program will cost at least \$1.6 million in incremental labor. Based on an estimate of productivity gains across the entire NERC Compliance Program, we expect \$1.2 million in annual productivity gains as a result of the Archer implementation.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 3,932,685	\$ 3,932,685

Cash Flow:	Prior Years	2012	2013	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,334,914	\$ 1,945,481	\$ 652,290	\$ 3,932,685
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 1,334,914	\$ 1,945,481	\$ 652,290	\$ 3,932,685
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ 283,770	\$ 260,285	\$ 544,055

**Start Date:** 12/15/2012      **Completion Date:** 12/31/2014      **In Service Date:** 12/31/2014

Continued on next page

## Capital Improvement Approval Requisition

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**Company:** American Electric Power Service Corporation Version 1

**Project :** ITSSV1072 Governance, Risk and Compliance Enterprise Platform  
1 Riverside Plaza, Columbus, Ohio

Continued from prior page

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** 2012 Control Budget Yes Offset Source N/A  
*(included in IRC Presentation)*

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 12/6/2012

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	3,932,685	-	3,932,685
<b>Total</b>	<b>\$ 3,932,685</b>	<b>\$ -</b>	<b>\$ 3,932,685</b>


**2012 Direct Cost Budget Funding**

**Budget Offset Source and Amount**

In Budget	\$	1,334,914	<i>(If budget offset, provide Opco, BU, Project ID, \$'s)</i>
Budget Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	SVP and CIO	Alberto Ruocco	See electronic approval attached	12/6/2012
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		12/12/12

**Project Contacts**

Contact	Name	Telephone
Project Manager	Rae Lynn Mizer	200-3277
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification:

Security (Cyber & Physical) Risk Management, and NERC Compliance efforts today consist of many manual disjointed processes and unsustainable disparate technologies to track and manage many of the areas in IT and the BU's that an automated robust solution will provide instead.

The manual processes are not only inefficient, but inconsistent, leading to gaps.

### Existing Gaps

- Static standalone risk and compliance documentation prevents automation:
  - Standalone Word/Excel documents cannot be rolled up to executive level reporting or automatically mapped
- No enterprise wide platform for security policy governance:
  - Inability to map security policy and standards across functions or regulatory requirements
  - Map an external policy to in house policy and standards
  - Map a single cyber security policy to multiple BU's
- No enterprise platform for security risk and compliance management:
  - Inability to roll up BU/Operating Company (OPCo) risks and compliance results to executives
  - Inability to summarize individual project risk and compliance assessments into BU/OPCo single key indicator of overall risk
  - Inability to track overall risk and compliance, quarter to quarter or measure improvement or decline

### Existing Inefficiencies

- Redundant policy and standards:
  - Ability to see all exemptions to a specific policy
- Numerous compliance control programs:
  - Siloed compliance control programs prevent consolidation of redundant controls (Sarbanes-Oxley, North American Electric Reliability Corporation and Personally Identifiable Information)
  - Numerous control program review periods results in significant workload doing different but similar management quarterly reviews
- Numerous mitigation programs not mapped:
  - Mitigation programs are standalone projects

### Solutions

To support this vision and operating approach, the business value realized as a result of this initiative will be a centralized, comprehensive view of numerous program specific risk and control management initiatives into a uniform AEP library of authoritative sources thus eliminating many duplicate functions, processes, and manual efforts.

- ✓ The Security Risk Management Framework solution will enable AEP to move to a more **effective and efficient approach of automated, centralized risk management through real-time visualization of AEP's risk profile and compliance status** while providing, socializing and reporting a comprehensive view of AEP Cyber Security Risk status.
- ✓ Improve **efficiencies, accountability and consistency** required to maintain security and compliance to policies, standards and regulatory requirements by mapping a comprehensive library of policies, control standards, procedures and assessments to industry standards and regulations for compliance measurement and reporting. This will reduce the reliance on key SMEs to remember what is needed to prove compliance
- ✓ Enable efficient risk summation to Business Unit (BU)/Operating Company (OPCo) executive level and updated frequently as required.
- ✓ Enable drilldown to specific risk issues to provide visibility and clarity across management teams.
- ✓ Fundamentally re-engineer policy, controls, and reporting processes to enable non custom deployment of off-the-shelf-software technology thus enabling maximum savings.
- ✓ Finally, the Security Risk Management Framework solution will aid in the establishment of controls to predict, prevent, and where necessary correct compliance and security issues.

## Capital Improvement Approval Requisition

### Other Alternatives Considered

Doing nothing is an option, but the following list covers some of the risks associated with doing nothing.

#### **Potential risks of not implementing an Enterprise Security Risk Management Tool (Security Risk Management Framework):**

- ✓ Failed audits and potential fines for weak, inconsistent or non-existent controls
- ✓ Failure to meet compliance requirements. FERC (Federal Energy Regulatory Commission) continuing to raise the bar on what is required to prove compliance
- ✓ Static stand-alone risk documentation prevents automation
- ✓ No enterprise-wide platform for cyber security policy governance
- ✓ No enterprise-wide platform for cyber security risk management
- ✓ No enterprise-wide platform for cyber security compliance management
- ✓ Inefficient and redundant processes for cyber security policies and standards
- ✓ Numerous compliance control programs
- ✓ Mitigation efforts are stand-alone projects
- ✓ Inability to provide timely information on cyber security risks regarding threats and vulnerabilities deemed to be of high impact to AEP
- ✓ Inability to respond to, and monitor, cyber security risks through the establishment of key risk indicators (KRI)
- ✓ Inability to track cyber security risk trends that would otherwise allow the identification of failed internal processes, inadvertent and/or deliberate actions of people, system and technology problems, and external events
- ✓ Inability to track cyber security risk trends and their "interrelationships" (how risks relate to each other)
- ✓ Inability to track cyber and physical security risks affecting one part of the AEP enterprise that may impact another business unit or operating company
- ✓ Inability to track cyber and security risks inherent with the risk of establishing formal, contractual communications with third party relationships
- ✓ Inability to prioritize risk, track residual risk, and track and monitor mitigation of cyber and physical security risk and compliance monitoring

## Capital Improvement Approval Requisition

### Conclusion

The recommendation is to implement an Enterprise Security Risk Management tool.

A request for proposal (RFP) was submitted by a cross-functional team consisting of IT and BU representatives. The following vendors were evaluated: RSA, RSAm, Agilience, Trustwave, OpenPages, Telos, Modulo, and MetricStream.

Based on the vendor responses, the selection was narrowed down to 3 vendors: RSA, RSAm and Agilience. The 3 finalists were brought in for demos and **RSA was selected due to the robust, flexible framework and comprehensive modules covering the security risk management domains needed for AEP.**

**In addition, a NERC Proof of Concept test was performed to ensure that this solution will enable a forward looking regulatory controls compliance program to be achieved with minimal impacts to current staffing.**

The enterprise deployment of this tool will be governed by a Steering Committee of Director level representatives from both Security, Regulatory Services and BUs that will utilize this tool. The program direction is to achieve NERC compliance functionality as a program priority while full suite of modules is deployed as an enterprise foundation for this platform.

Gartner rating: Strong Positive & Challenger

Product Strategy — The RSA Archer eGRC Platform enables EMC-RSA to support a breadth of use cases beyond the standard risk management and compliance cases through customer self-development and sharing between customers in the Archer Exchange community, and through the development of new capabilities by EMC-RSA. Content is a strength of Archer's, and EMC-RSA is adding additional content to support more vertical industry and compliance needs.

Cost justification includes the reduction of 3 Full Time Equivalents (FTE's) in Security (already achieved as part of April round 3 reductions in anticipation of this "Cost to Achieve" project) and the future avoided costs of 10 FTEs as part of process streamlining and elimination of duplicative controls, and transition to regulatory forward looking controls.

### Associated/Future Projects

None.

### Financial Information

Total Capital Costs	Total Cost			Direct Costs		
	IT	BU	Total	IT	BU	Total
Internal Labor	506,880	599,040	1,105,920	506,880	599,040	1,105,920
Outside Services - Labor	965,430	-	965,430	965,430	-	965,430
Outside Services Software	1,334,914	-	1,334,914	1,334,914	-	1,334,914
Material	-	-	-	-	-	-
Other Cost Category	-	-	-	-	-	-
Fleet	-	-	-	-	-	-
Cell Phone	5,576	6,591	12,167	5,576	6,591	12,167
Fringes/Incentives	235,700	278,554	514,254	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>3,048,500</b>	<b>884,185</b>	<b>3,932,685</b>	<b>2,812,800</b>	<b>605,631</b>	<b>3,418,431</b>



Date December 5, 2013



Company American Electric Power Service Corporation		CI/LI/CPPI/Program Number ITSSV1174	Version 2
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B SB 12/5/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.
		Reviewed by CP&B SB 12/5/13	
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	11/25/2013	
1	S. Bundy	SB 12/5/2013	
	B. A. MacPherson		
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 12/7/13 12/18/13 Dec 2013	Approved in PeopleSoft Month Included in Board Package

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## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 2**

**Project :** ITSSV1174 - Enterprise Data Warehouse Database Replatform to Oracle - Revision  
 1 Riverside Plaza, Columbus, OH

**Description:** The Enterprise Data Warehouse (EDW) has an environment that is operating on a software package that is on extended support, hardware servers that are aging with extended support and maintenance agreements month to month. A re-platform decision is needed and the resulting project will include cost efficiencies and cost avoidance with the Oracle Unlimited License Agreement (ULA). The recent architectural standard of moving towards a standardized database heavily influences how the EDW team would solve their ever-increasing growth of the EDW database environment.

The scope of this request is to implement an oracle database and hosting solution, achieve cost savings for the IBM support and maintenance by utilizing an existing agreement with Oracle, and result in maintenance payment elimination for Universal Database (UDB) software support as well as the retirement of the application. It will include the migration of the data to Oracle and includes improved availability and scalability, utilizing the real-time application clustering (RAC) with Oracle. The hosting of this environment will include the purchase of Cisco hardware that facilitates the ease of expanding components and services. This effort represents a project scope of 8800 hours in effort to deploy.

This project cost will be allocated to all companies based on number of workstations. AEP Generation Resources will be included in this allocation.

**Reason for Revision:**

There are a number of reasons why there is a need for additional funds on this project.

- Unknown conversion issues; the project is executing something that has never been done at AEP before
- Considerable amount of issues w/ the data that was not anticipated
- Issues with Date/Time Stamp between UDB & Oracle
- Loss of Cycle 1 resources who had detailed knowledge the rest of the team did not have
- Character & Varchar data type in Oracle vs UDB – caused some rework
- Nulls, spaces & empty strings between Oracle and UDB caused significant issues as well as rework

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ 970,235	\$ 1,250,846	\$ 2,221,081

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ 435,525	\$ 1,301,236	\$ 484,320	\$ -	\$ 2,221,081
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ 435,525	\$ 1,301,236	\$ 484,320	\$ -	\$ 2,221,081

<b>Start Date:</b> 5/6/2012	<b>Completion Date:</b> 3/30/2014	<b>In Service Date:</b> 3/31/2014
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**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 11/25/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	970,235	-	970,235
This Submission	1,250,846	-	1,250,846
<b>Total</b>	<b>\$ 2,221,081</b>	<b>\$ -</b>	<b>\$ 2,221,081</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast		
Offset	\$ 1,035,803	<i>AEP Service Corp ITCAPPROJ</i>

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	11/25/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		12/7/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Rhonda L Myers	200-3678
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

The Enterprise Data Warehouse (EDW) over the last two years has increased its user community and has experienced a significant growth in critical business functions which can be seen in the many requests from Financial, Supply Chain, Generation, Emissions, Commercial Operations Settlement, Transmission and Utilities regulatory analytics.

The Enterprise Data Warehouse has an environment that is operating on a software package that is on extended support, hardware servers that are aging with extended support and maintenance agreements month to month. An upgrade or a re-platform decision is needed and they must make a decision that also includes cost efficiencies and alignment with strategy.

With this project the data warehouse will be able to achieve cost avoidance with the IBM Enterprise License Agreement (ELA). Currently we spend \$486K twice a year with IBM to support the UDB architecture. Additional savings for extended support payments of \$149K for the aged hardware will cease upon retirement of the application in June 2013. Due to the Oracle ULA, avoidance of purchasing \$2.1 million in oracle database software licenses will be avoided. The capital required to implement by June of 2013, is \$ 970,235.

### Reason for Revision:

There are a number of reasons why there is a need for additional funds on this project.

- The original estimate was higher and the team was asked to lower it
- Unknown conversion issues; the project is executing something that has never been done at AEP before
- Considerable amount of issues w/ the data that was not anticipated
- Issues with Date/Time Stamp between UDB & Oracle
- Loss of Cycle 1 resources who had detailed knowledge the rest of the team did not have
- Character & Varchar data type in Oracle vs UDB – caused some rework
- Nulls, spaces & empty strings between Oracle and UDB caused significant issues as well as rework

### Other Alternatives Considered

The data warehouse considered what it would take to upgrade the UDB from 9.1 to 9.7. The costs were the same as it relates to labor to upgrade or migrate to a new technology. However, the long term costs with software licensing and support would forecast the ongoing spend to almost a million per year just for software and licensing support. The lifecycle of hardware would have to occur during the upgrade and the annual costs for hardware would have been upwards of four hundred thousand.

### Conclusion

The recommendation to move off of the UDB solution to Oracle and hosting that environment on commodity based hardware ensures EDW will be able to manage for the demand and even improve the O&M projected budget spend by avoiding the yearly software support for UDB. A potential capital cost avoidance of upwards \$2 million could be achieved in what it would cost us to purchase the oracle licenses outside of our existing unlimited license agreement through 2014. The oracle solution provides additional functionality such as partitioning which ensures that the data is accessed in the most efficient manner, ultimately improving the user's query response time. The ability to improve availability of large volumes of data, as seen with a gridSMART type of query, will be seen in the return of the data.

### Associated/Future Projects

ITSSV1205 – EDW Database Replatform Hardware

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	857,479	-	857,479	857,479	-	857,479
Outside Services - Labor	849,651	-	849,651	849,651	-	849,651
Outside Services Software	-	-	-	-	-	-
Material	-	-	-	-	-	-
Other Cost Category	19,087	-	19,087	19,087	-	19,087
Fleet	-	-	-	-	-	-
Fringes/Incentives	494,864	-	494,864	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>2,221,081</b>	<b>-</b>	<b>2,221,081</b>	<b>1,726,217</b>	<b>-</b>	<b>1,726,217</b>

Date January 16, 2013



<b>Company</b> American Electric Power Service Corporation	<b>CI/LI/CP/Program Number</b> ITSSV1198	<b>Version</b> 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B JLF 1-16-13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B JLF 1-16-13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	<i>[Signature]</i> 1/17/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	B. D. Radous		
	S. Burge		
	L.J. Weber		
	M. C. McCullough		
	D. E. Welch		
	R. P. Powers		
	L. Barton		
	Buckeye Power Approval		
	N. K. Akins		
2	Jenifer Fischer - 28th floor Ext 3032		
		1-24-13	Approved in PeopleSoft
		Jan 2013	Month Included in Board Package

Alternate CP&B Contacts:  
 Cathy Warchal - 28th Floor - Ext 1347

Scanned File Name: AEPSC ITSSV1198.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITSSV1198 - Enterprise Content and Collaboration Implementation of Future State IT Solution  
 1 Riverside Plaza, Columbus, OH

**Description:** To meet the evolving needs of the business, Information Technology (IT) and the Enterprise Content Management (ECM) Advisory Board proposes this CI to implement the Future State (IT) Solution. The proposed enhancements are a continuation of the ECM program and will broaden and increase the rate adoption through the increased tool flexibility and revised naming conventions needed to support multiple business units. This enterprise solution improves business process efficiency by enabling consistent document management practices thereby eliminating wasted labor hours learning various systems, searching for documents and recreating lost documents, all of which are activities within every process of the organization.

**Benefits**

1. To Date: NPV \$8,893,622 of Type 2 Benefits due to a one time cost avoidance for two separate document management systems and productivity gains associated with the increase in users since May 2011; these productivity gains are driven by creation of an Enterprise base service, eMail export to Documentum, a simple and fast user interface for search, computer based end user training and a few small enhancements. Generation has derived un-quantified productivity benefits primarily from engineering projects and plant maintenance documentation; other benefits have been gained from the reliability of a single repository, version control, watermarking for sensitive information and automated periodic reviews.
2. Future: NPV \$7,068,000 of Type 2 Benefits are estimated in this CI. These benefits are due to \$1.6M one-time cost avoidance to create separate document management systems and an estimated \$12,348,000 in productivity savings (over 5 years). Improved user experience delivered through new flexibility and a revised naming convention will return additional Type 4 benefits.

**Risk of 'Do Nothing'**

Operating Companies and business units will adopt different content management solutions resulting in disparate technologies and non-integrated solutions. These different technologies will increase waste from inconsistent business processes and duplication of support personnel, leading to an increase in total cost of ownership for the overall AEP organization.

**Authorization Amount:**

	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 2,514,104	\$ 2,514,104

**Cash Flow:**

	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,448,679	\$ 1,065,425	\$ -	\$ 2,514,104
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 1,448,679	\$ 1,065,425	\$ -	\$ 2,514,104
<b>Associated O&amp;M</b>	\$ -	\$ 77,564	\$ 94,355	\$ -	\$ 171,919

**Start Date:**

1/1/2013

**Completion Date:**

12/31/2014

**In Service Date:**

12/31/2014

**Regulatory**

Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:**

Included in IRC Presentation

Yes

Project Funded

Yes

Offset Source

AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/S. Smith/M. McCullough

**Approved On:** 1/4/2013

## Capital Improvement Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	2,514,104	-	2,514,104
<b>Total</b>	<b>\$ 2,514,104</b>	<b>\$ -</b>	<b>\$ 2,514,104</b>


### 2013 Direct Cost Budget Funding

### Budget Offset Source and Amount

In Budget	\$	-	
Budget Offset	\$	1,195,393	AEPS

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	1/4/2013
amt ≤ \$ 20m	EVP Generation	Mark McCullough	See electronic approval attached	10/10/2012
amt ≤ \$ 10m	SVP Transmission Strategy & Business Development	Scott Smith	See electronic approval attached	9/12/2012
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		01/17/13

### Project Contacts

Contact	Name	Telephone
Project Manager	Karen Blubaugh	200-1943
Requisition Detail Provider	Stan Bundy	200-3924



## Capital Improvement Approval Requisition

### Project Justification

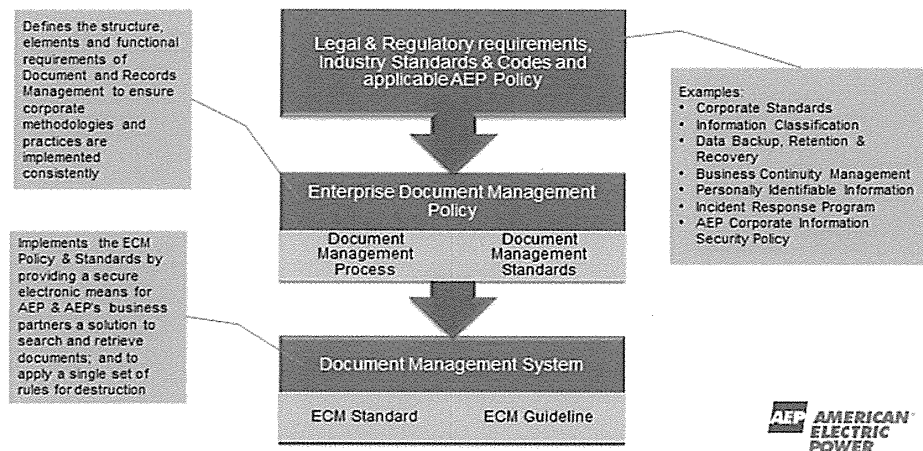
#### *Business Imperative*

In the pursuit to adopt Document Management, business areas require revised naming conventions to eliminate the departmental nature of the current naming convention; the new convention utilizes a functional naming approach that translates across all business areas and is sustainable into the future. Second, the system does not provide the flexibility business areas require to provide additional metadata at a local level. And, third, this project will work with senior management to create and institutionalize appropriate document management policies and standards. The final phase of the project will migrate Generation and Commercial Operations to the upgraded system; this migration eliminates the Commercial Operations system that is out of vendor support and provides Generation with the same benefits described above.

All proposed changes were designed and agreed upon by representatives across all AEP lines of business.

#### *Solution- Process*

Implement enterprise document management policy and standards. The System provides electronic solution for consistent management of AEP policy and standards.



#### *Solution - People*

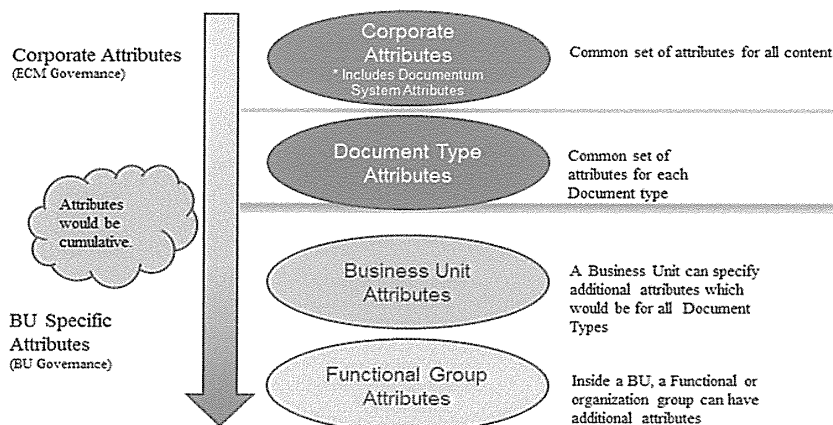
- **Senior Management Sponsorship – Requires Strong Change Management**
  - Drive adoption of the policy, standards and processes
  - Promote single solution
- **Training Necessary**
  - New approach to store company documents
  - **New Roles / Responsibilities**
    - Program Owner - Sponsorship and direction at the business area level
    - Application Owner - Drives requirements and performs testing of the application
    - Process Owner - Defines and drives document management processes (at the local level)

## Capital Improvement Approval Requisition

### Project Justification (Continued)

#### Solution - Technology

- Revised document naming conventions
  - Current naming conventions 'grew up' in Generation and are organizational in nature
- Added flexibility
  - Business areas will have the ability to extend document attributes without deviating from the Corporate naming conventions
- Integration with SharePoint
  - Documents can be checked in, checked out and searched from SharePoint eliminating the extra steps



## Capital Improvement Approval Requisition

### Project Justification (Continued)

**Value**

**Cost**

Direct Capital Funding (as of July 2012)  
 Revised November 2012 - Removed Transmission funding

Cost Distribution	Phase I	Phase II	Phase III	Phase IV	Total
Generation	\$71,750	\$71,750	\$120,750	\$327,690	\$591,940
IT	\$215,250	\$215,250	\$362,250	\$665,310	\$1,458,060
Transmission	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$287,000</b>	<b>\$287,000</b>	<b>\$483,000</b>	<b>\$993,000</b>	<b>\$2,050,000</b>

	Future State Capability Project			Commercial Operations Migration Project			Generation Migration Project			Grand Total
	BU	IT	Total	BU	IT	Total	BU	IT	Total	
<b>Capital</b>										
Labor	\$537,600	\$228,000	\$765,600	\$137,280	\$70,720	\$208,000	\$387,024	\$199,376	\$586,400	\$1,560,000
SharePoint / Documentum Integration Software		\$100,000	\$100,000							\$100,000
Contingency (25%)	\$134,400	\$57,000	\$191,400	\$34,320	\$17,680	\$52,000	\$96,756	\$49,844	\$146,600	\$390,000
<b>Total</b>	<b>\$672,000</b>	<b>\$285,000</b>	<b>\$957,000</b>	<b>\$171,600</b>	<b>\$88,400</b>	<b>\$260,000</b>	<b>\$483,780</b>	<b>\$249,220</b>	<b>\$733,000</b>	<b>\$2,050,000</b>
<b>O&amp;M One Time</b>										
Labor (Training and/or Data Migration)		\$25,000	\$25,000		\$10,000	\$10,000		\$36,500	\$36,500	\$71,500
Contingency (25%)		\$6,250	\$6,250		\$2,500	\$2,500		\$9,125	\$9,125	\$17,875
<b>Total</b>		<b>\$31,250</b>	<b>\$31,250</b>		<b>\$12,500</b>	<b>\$12,500</b>		<b>\$45,625</b>	<b>\$45,625</b>	<b>\$89,375</b>
<b>O&amp;M Re-occurring</b>										
Software Maintenance		\$20,000	\$20,000							\$20,000
<b>Total</b>		<b>\$20,000</b>	<b>\$20,000</b>							<b>\$20,000</b>

**Benefits**

- **Type 2 Benefits** Source: ECM Working Group productivity assessment conducted April 2012

Summary (000)	2013	2014	2015	2016	2017	2018
Type 1 Benefits						
None						
Type 2 Benefits						
Productivity Savings		\$176	\$908	\$2,128	\$4,568	\$4,568
Avoided Costs						\$1,600

- **Avoided cost of \$1,600,000 to create separate document management systems for 2 line of business areas**
- **Estimated \$12,348,000 productivity savings derived from document management efficiencies gained in Transmission, Distribution, Generation, Accounting, Regulatory, ES&H and IT.**

## Capital Improvement Approval Requisition

### Project Justification (Continued)

Other benefits (Type 4 benefits)

- Business Flexibility
  - Allows new Business Unit on-boarding without impacting existing Business Units
  - Allows Business Unit Functional Groups to be on-boarded by Business Unit
  - Allows Business Unit to tailor security
- Standardization
  - Allows content management alignment at Corporate and Business Unit level
  - Accelerates Business Unit adoption of Content Service
  - Allows Business Units to further realize benefits from an Enterprise Content Management Strategy
  - Allows content management practices (Policy, Standard & Guidelines) institutionalized into AEP culture
  - Enables reliance on a management system (not individuals)
- User Experience
  - Allows Business Unit to tailor user experience to business process
  - Guides user through ECM processes
  - Improves Application integration capability

**Type 1** Has Direct / Tangible \$ benefit (e.g. Increased revenue, Decreased expenses, etc.)

**Type 2** Has Indirect / Intangible \$ benefit (e.g., Productivity savings, Avoided costs, Opportunity cost etc.)

**Type 3** No measurable \$ benefit, but is nevertheless measurable. (e.g., Improved customer sat, Lower CAIDI/SAIDI, etc.)

**Type 4** No measurable benefit, but nevertheless has benefit (e.g. improved public opinion or PUC opinion, etc.)

### Cash Flow

Confirmable benefits:

Summary (000)	2013	2014	2015	2016	2017	2018
<i>Type 1 Benefits</i>						
None						
<i>Costs (Direct Capital)</i>						
Internal Labor	(\$545)	(\$430)				
Outside Services - Labor	(\$545)	(\$430)				
Outside Services - Software	(\$100)					
All Other Direct Costs						
<b>Costs (Direct Capital) Sub Total</b>	<b>(\$1,189)</b>	<b>(\$861)</b>				
<i>Costs (O&amp;M)</i>						
Internal Labor	(\$39)	(\$50)				
Software Maintenance	(\$20)	(\$20)	(\$20)	(\$20)	(\$20)	(\$20)
<b>Total</b>	<b>(\$1,248)</b>	<b>(\$931)</b>	<b>(\$20)</b>	<b>(\$20)</b>	<b>(\$20)</b>	<b>(\$20)</b>
	NPV:	(\$1,997)	8.5%	Discount rate		

## Capital Improvement Approval Requisition

### Project Justification (Continued)

With non-confirmable benefits included:

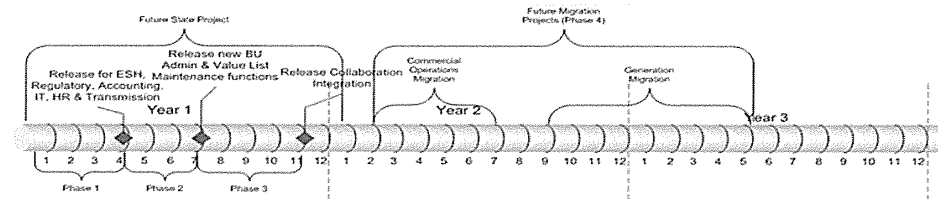
Summary (000)	2013	2014	2015	2016	2017	2018
<i>Type 1 Benefits</i>						
None						
<i>Type 2 Benefits</i>						
Productivity Savings		\$176	\$908	\$2,128	\$4,568	\$4,568
Avoided Costs						\$1,600
<i>Costs (Direct Capital)</i>						
Internal Labor	(\$545)	(\$430)				
Outside Services - Labor	(\$545)	(\$430)				
Outside Services - Software	(\$100)					
All Other Direct Costs						
<b>Costs (Direct Capital) Sub Total</b>	<b>(\$1,189)</b>	<b>(\$861)</b>				
<i>Costs (O&amp;M)</i>						
Internal Labor	(\$39)	(\$50)				
Software Maintenance	(\$20)	(\$20)	(\$20)	(\$20)	(\$20)	(\$20)
<b>Total</b>	<b>(\$1,248)</b>	<b>(\$931)</b>	<b>\$888</b>	<b>\$2,108</b>	<b>\$4,548</b>	<b>\$6,148</b>
	(\$1,248)	(\$2,179)	(\$1,291)	\$817	\$5,365	\$11,513
	NPV:	\$7,068	8.5% Discount rate			

## Capital Improvement Approval Requisition

### Project Justification (Continued)

Note: Page 5 shows the final BU and IT Funding breakdown approved by IT, Generation and Transmission.

#### Schedule



Release	Description	Capital Cost	Duration
Phase 1 – Build Data Model & Migrate	- Build out 4 level data model and migrate to Future State Taxonomy	-BU \$215K	3-4 months
	- Migrate folder structure, ACLs, and content to new Future State Taxonomy	-IT \$72K	
Phase 2 – BU admin, Value List Maintenance	- ESH, Regulatory, HR, IT, Transmission, Accounting and the separate Accounting Policy & Research database would be migrated	-BU \$215K	3-4 months
	- Build out additional Future State capabilities including BU Admin functions, and Value List maintenance	-IT \$72K	
Phase 3 – Collaboration Service Integration	- Enhance Collaboration Service to Content Service Integration	-BU \$242K -IT \$242K	4 months
Phase 4 - Future Migration Projects	- Commercial Operations and Generation migrations to Future State	-BU \$655k	5 months
		-IT \$338k	8 months

### Other Alternatives Considered

#### Do Nothing

The current ECM effort will continue and introduces risk of

- ECM Governance paralysis
- Availability of people
- Missed benefit realization as some BU's resist current system configuration and business rules
- Leading to ... Long term disparate BU content management solutions, causing
  - Significant increase in operational costs
  - Different technology from different vendors
  - Multiple integrations
  - Difficulty to support enterprise compliance and litigation hold initiatives

#### Expand ECM effort

Include additional features as defined in this business case to achieve future state vision.

## Capital Improvement Approval Requisition

### Project Justification (Continued)

#### *Summary*

In May 2011 a CI was approved to enable a document management base service and multiple small projects including an eMail export to Documentum, a simple and fast user interface for search, computer based end user training, Microsoft Office and SharePoint integration, retention policy services, an expanded Asset Suite integration and a few small enhancements. Benefits from the May 2011 CI are being realized as usage of Documentum increases; the base service will remain intact, but will require modifications to meet the new requirements of this business case.

#### **Conclusion**

This initiative is required to establish an efficient solution to enable consistent management of documents at AEP. New enterprise policy and standards are needed to reinforce consistency in processes and document management practices at AEP.

#### **Associated/Future Projects**

As AEP evolves the requirements of the document management system are expected to evolve. Additional capital investments will be required to stay current of vendor software versions AND to expand capabilities. Known forecasted projects include:

2013		2014		2015		2016	
ECM Future State CI \$2,050,000						Documentum Version Next CI \$250,000	
Documentum Version 7.0 CI \$250,000		Optical Character Recognition CI \$175,000					
Enterprise Search CI \$650,000							
Documentum Licenses CI \$687,500							

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	774,250	200,750	975,000	774,250	200,750	975,000
Outside Services - Labor	774,250	200,750	975,000	774,250	200,750	975,000
Outside Services Software	100,000	-	100,000	100,000	-	100,000
Material	-	-	-	-	-	-
Other Cost Category	-	-	-	-	-	-
Fleet	-	-	-	-	-	-
Cell Phone	8,518	2,210	10,727	8,517	2,210	10,727
Fringes/Incentives	360,027	93,350	453,377	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>2,017,045</b>	<b>497,060</b>	<b>2,514,104</b>	<b>1,657,017</b>	<b>403,710</b>	<b>2,060,727</b>



Date April 16, 2013



Company American Electric Power Service Corporation		CI/LI/CP/Program Number ITSSV1245	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B <i>SM 4/15/13</i>	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received. Reviewed by CP&B <i>SM 4/15/13</i>
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	J. Buonaiuto	4/10/2013	
	A. Ruocco	4/10/2013	
1	S. Bundy	<i>SM</i> 4/15/2013	
	B. A. MacPherson		
2	D. Lynch	<i>DL</i> 4/16/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Cathy Warchal - 28th floor Ext 1347		
		<i>4-24-13</i>	Approved in PeopleSoft
		<i>APR 2013</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch - 28th Floor - Ext 1142

Scanned File Name: AEPSC ITSSV1245.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITSSV1245 Upgrade or Replace Expense Reporting System  
 1 Riverside Plaza, Columbus, Ohio

**Description:** AEP's current Expense Reporting System (NOVA) has been in place since 1999 with the last upgrade occurring in 2004. This system processes credit card purchases for payment, manages reporting and approval of travel expenses, cash advances and out of pocket business expenses. NOVA receives daily batch files from the bank with all Corporate credit card transactions and feeds approved expense reports as vouchers to Accounts Payable twice daily.

There is significant risk NOVA may become unstable and unable to meet future business needs since the hardware (infrastructure and desktop) required to support the application and batch processes are no longer supported. Likewise, the vendor no longer offers new functionality in this version of their software. Therefore, initiation of a project in 2013 is requested to bring AEP's expense reporting system up to date before the business is impacted. A new expense reporting system will provide greater detail of expense reporting through level III data, enhance receipts compliance and improve usability for employees through browser or mobile device.

Benefits: Type 1 - Avoided annual maintenance costs of \$137,893

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>		\$ 2,192,843	\$ 2,192,843

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 2,192,843	\$ -	\$ -	\$ 2,192,843
<b>Total to be Authorized</b>	\$ -	\$ 2,192,843	\$ -	\$ -	\$ 2,192,843
<b>Net AEP Cash Flow</b>	\$ -	\$ 2,192,843	\$ -	\$ -	\$ 2,192,843
<b>Associated O&amp;M</b>	\$ -	\$ 36,070	\$ -	\$ -	\$ 36,070

**Start Date:** 5/1/2013      **Completion Date:** 1/31/2014      **In Service Date:** 1/31/2014

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** Included in IRC Presentation  Yes      Project Funded  Yes      Offset Source  AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** J. Buonaiuto/A. Ruocco

**Approved On:** 4/10/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	2,192,843	-	2,192,843
<b>Total</b>	<b>\$ 2,192,843</b>	<b>\$ -</b>	<b>\$ 2,192,843</b>


**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ 1,788,831	<i>(If offset, provide Opco, BU, Project ID, \$'s)</i>
Offset	\$ -	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	04/10/13
amt ≤ \$ 10m	SVP Controller and CAO	Joseph Buonaiuto	See electronic approval attached	04/10/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		4/16/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Tim Curtiss	200-1128
Requisition Detail Provider	Criss McCutcheon	200-1114

## Capital Improvement Approval Requisition

### Project Justification

There is a significant risk NOVA may become unstable or unable to meet future business needs given the aggregation of the infrastructure risks noted below.

- The current NOVA application server is an unsupported platform. The outdated version of weblogic and an older version of the application contribute to data presentation issues. (i.e., expense reports being overwritten or being unable to account for outstanding cash advances). To mitigate, there is a nightly reboot to clear data caching, and support performs several data fixes per month to clean up data errors.
- The annual maintenance fee is \$137,893 for the NOVA application. Because this version of the application is older, the vendor (SumTotal) no longer offers new functionality in this version of their software. Likewise, SumTotal's support capacity will likely diminish as resources shift to support customers moving to their current version. In 2011, AEP contacted the vendor five times to receive support. AEP contacted Sum Total once in 2012 for support.
- The current Nova version requires Windows 2003 on the batch server. Thus, we are unable to upgrade the server to AEP's current Windows standard. This also impacts any future upgrades to the encryption software needed to encrypt the batch data files from the credit card provider (support Personally Identifiable Information data).

NOVA requires the installation of Java software on a user's workstation. While not frequent, this has caused conflicts with other applications at AEP which require a different Java Virtual Machine (JVM) version on the workstation. At times, this requires assistance from the help desk or technical support resources to uninstall and re-install JVM on workstations. A web based application without workstation components would no longer require this assistance.

### Other Alternatives Considered

- Remain on the current system. This alternative would accept the risks previously noted and address the issues if/when the system becomes unstable. Under this alternative no new functionality is possible and AEP would continue to rely on SumTotal to provide break/fix support when needed.
- Implement a new internally hosted solution. Under this alternative AEP would incur costs for the initial purchase, infrastructure, implementation and for continuing annual maintenance. AEP would internally support the solution including enhancements and upgrades.
- Implement a new externally hosted Software as a Service (SaaS) solution. Under this alternative AEP would incur costs for the annual subscription pricing and implementation. Under an externally hosted model the vendor would push out upgrades and provide enhancements through scheduled releases. Internal support in turn would be needed for communication with the vendor on technical issues and for testing of new releases.
- Implement a stand alone version of the PeopleSoft Expenses module. Under this alternative AEP would not incur further licensing since AEP already licenses PeopleSoft Financials which includes the Expenses module. No hardware costs will be incurred since the existing hardware will be utilized. However, AEP would incur costs for implementation.

### Conclusion

AEP must implement a new expense reporting solution. A stand alone version of PeopleSoft Expenses is recommended based on cost and the demonstrated functionality.

### Associated/Future Projects

None.

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	728,129	140,712	868,841	728,129	140,712	868,841
Outside Services - Labor	854,360	-	854,360	854,360	-	854,360
Outside Services Software	-	-	-	-	-	-
Material	56,072	-	56,072	56,072	-	56,072
Other Cost Category	8,010	1,548	9,558	8,010	1,548	9,558
Fleet	-	-	-	-	-	-
Fringes/Incentives	338,580	65,432	404,012	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>1,985,151</b>	<b>207,692</b>	<b>2,192,843</b>	<b>1,646,571</b>	<b>142,260</b>	<b>1,788,831</b>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 2</b>																																										
<b>Project:</b>	ITSSV1255 - Advanced Cyber Security Tools - - Revision																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>Recent cyber security maturity assessments by two 3 party companies, along with recent emerging cyber threats/attacks to AEP, have identified a number of maturity and technology gap findings in AEP's enterprise cyber security program. An enterprise wide multi-year mitigation program is being developed to address those gaps; this project is the first of a group of sub-projects designed to mitigate those findings. This project is part of the high priority mitigation plan to improve network threat visibility; data loss protection; and transparency/accountability in cyber risk reporting.</p> <p>This CI represents three (3) capital efforts that are relatively low effort, high impact to kick off the Enterprise Cyber Security Effectiveness Program (ECSEP). A subsequent Capital Program will detail the entire multi-year program with all costs being tracked against the implementation roadmap. The entire program is expected to cost approximately \$20M. There will be ongoing O&amp;M associated with this project for software maintenance and internal labor.</p>																																											
<b>Revision Reason:</b>	<p>Major components included in this revision are:</p> <ul style="list-style-type: none"> <li>• Upgrade of the MyAccess application. This application provides user account registration, provisioning, termination, and quarterly access reviews for a significant number of AEP users, and is the key platform for compliance (Sarbanes-Oxley, North American Electric Reliability Corporation Critical Infrastructure Protection, and Segregation of Duties functionality).</li> <li>• Purchase and deploy the Security Network Access Control (SNAC) platform. SNAC is a critical security tool that can identify all network connected devices and then only allow access to approved systems and accounts.</li> <li>• Design and deploy a configuration management monitoring capability platform for the enterprise to ensure that critical security attributes are configured and maintained on network connected devices like servers and key devices.</li> <li>• Purchase and deployment of a normalization tool required as part of our Archer platform for software vulnerability monitoring, assessments and mitigations to help identify those assets within the network that have known cyber-attack vulnerability and enable an efficient mitigation program to be deployed.</li> </ul>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">Company</th> <th style="width: 25%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$7,512,753</td> <td>\$13,845,577</td> <td>\$21,358,330</td> </tr> <tr style="background-color: #ffff00;"> <td colspan="2"><b>Total</b></td> <td><b>\$7,512,753</b></td> <td><b>\$13,845,577</b></td> <td><b>\$21,358,330</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$7,512,753	\$13,845,577	\$21,358,330	<b>Total</b>		<b>\$7,512,753</b>	<b>\$13,845,577</b>	<b>\$21,358,330</b>																											
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<b>Project Dates:</b>	<b>Start Date :</b> 07/01/2013 <b>In Service Date :</b> 06/30/2015 <b>Completion Date:</b> 06/30/2015																																											
<b>Regulatory Cost Recovery:</b>	AEP System -- \$21.4M Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco, Lana L. Hillebrand, Nicholas K Akins	<b>Approved On :</b> 03/21/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$6,448,380	\$12,471,673	\$929,352	\$0	\$19,849,405
	Offsets Required	\$0	\$0	\$0	\$0	\$0
	<b>Total</b>	<b>\$6,448,380</b>	<b>\$12,471,673</b>	<b>\$929,352</b>	<b>\$0</b>	<b>\$19,849,405</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Stanley J Bundy	03/11/2014
		Approved	Jeffrey P White	03/11/2014
		Approved	H Kevin Stogran	03/11/2014
		Approved	Michael A Rozsa	03/11/2014
		Approved	Alberto G Ruocco	03/12/2014
		Bypassed	Randolph J Ware	03/13/2014
		Approved	Lonni L Dieck	03/13/2014
		Approved	Lana L. Hillebrand	03/19/2014
		Bypassed	Nicholas K Akins	03/20/2014
		Approved	Jenifer L Fischer	03/21/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	STOGRAN, H K
		Project Manager	AHEARN, EDWARD J

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>AEP's enterprise cybersecurity program is designed to address 3rd party cybersecurity assessment findings, gaps, and enhancements required to ensure a robust and reliable cybersecurity defense-in-depth program for the entire AEP enterprise. While this program will address most regulatory compliance issues, its primary focus and driver is a proactive defense against known and potential cyber-attack issues against the AEP network. This includes all aspects of the AEP enterprise including Transmission, Generation, Distribution, Utility, River Operations, Retail, and Energy Supply functions.</p> <p>AEP operates one cyber network across its entire footprint, with advanced monitoring and cyber capabilities at our two internet access points; and advanced cyber tools within the network for both monitoring, filtering, blocking, data loss prevention, alerting and response functions. AEP's highest cyber-risks include the potential injection of advanced malware into our network, especially on our corporate network which is used for email and external internet functions. Today's advanced threats and adversaries are capable of stealth operation where they can enter and inject themselves below our monitoring radar; mainly via phishing attacks, or malware compromised external internet websites.</p> <p>The enterprise cyber program is designed as a holistic approach to defending against this type of threat vector. While our regulatory type cyber programs are designed to focus on particular aspects of our operation, for example protection of the Bulk Electrical System (BES), the enterprise cyber program is designed to address all threats (all cyber-hazards) against the AEP enterprise.</p>
<b>Other Alternatives Considered:</b>	<p>The only other option considered was to continue at our current state of maturity. Based on the risk assessments conducted and the direction of AEP's leadership team, this is not a viable option as the risk is greater than what the organization is willing to accept. An enterprise cyber security enhancement program is the only option being considered at this time.</p> <p>As far as specific tools are concerned, various vendors and products will be considered. Selections will be made based on industry expertise, advanced capabilities and cost to achieve.</p>
<b>Conclusion:</b>	<p>The recommendation is for this program to be funded and implemented in 2013-2015 as a multi-year cyber security improvement roadmap.</p>



Date June 21, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1258	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B EPB 6/21/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B EPB 6/27/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	6/21/2013	
1	S. Bundy B. A. MacPherson	EPB 6/21/2013	
2	D. Lynch	DLH 6/21/13	
3	L. L. Dieck	LLD 6/24/13	
	C. Zebula B. X. Tierney		
	L. M. Barton		
	L.J. Weber M.C. McCullough		
4	L. Hillebrand D. E. Welch R. P. Powers	DLH	7/2/13
	Buckeye Power Approval		
5	N. K. Akins	NKA 6/25/13	
6	Cathy Warchal - 28th floor Ext 1347		
		July 22, 2013	Approved in PeopleSoft
		July 2013	Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITSSV1258.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITSSV1258 2013 IBM Enterprise License Agreement New Software  
 1 Riverside Plaza, Columbus, Ohio

**Description:** AEP has negotiated a new IBM Enterprise License Agreement (ELA) to replace the one expiring June 30, 2013. A new ELA is required in order to stay in compliance on IBM product licenses. AEP is also able to acquire new products at significant discounts as part of this multi-year product suite. These products are listed below:

- a) Greenhat
- b) Worklight
- c) Rational
- d) Focal Point
- e) Tivoli
- f) Domino
- g) AppScan
- h) Cognos Products
- i) Emptoris
- j) QRadar
- k) Other products to be determined from the IBM catalog

The associated O&M in 2013 and 2014 will be lower than our current agreement. The remainder of the new agreement will then be consistent with IT's current level of O&M budget and spend.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 10,900,000	\$ 10,900,000

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 6,900,000	\$ 4,000,000	\$ -	\$ 10,900,000
<b>Total to be Authorized</b>	\$ -	\$ 6,900,000	\$ 4,000,000	\$ -	\$ 10,900,000
<b>Associated O&amp;M</b>	\$ -	\$ 1,875,500	\$ 8,528,000	\$ 14,397,000	\$ 24,800,500

**Start Date:** 7/1/2013      **Completion Date:** 12/31/2014      **In Service Date:** 12/31/2014

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:**      Included in IRC Presentation  No      Project Funded  Yes      Offset Source  Corp Reserve 2013 Only

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/L. Hillebrand/N. Akins

**Approved On:** 6/25/2013

## Capital Improvement Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	10,900,000	-	10,900,000
<b>Total</b>	<b>\$ 10,900,000</b>	<b>\$ -</b>	<b>\$ 10,900,000</b>

### 2013 Direct Cost Budget Funding

### Budget Offset Source and Amount

In Budget	\$	1,900,000	<i>Corporate Reserve</i>
Budget Offset	\$	5,000,000	

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic signature attached	6/21/13
amt ≤ \$ 10m	SVP and CAO	Lana Hillebrand	<i>Lana Hillebrand</i>	7/2/13
amt ≤ \$ 10m	SVP Corporate Planning and Budgeting	Lonni Dieck	<i>Lonni Dieck</i>	6/24/13
amt ≤ \$ 20m	President & CEO	Nick Akins	<i>Nick Akins</i>	6/25/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.	<i>D. Lynch</i>	6/21/13

### Project Contacts

Contact	Name	Telephone
Project Manager	Gregg O'Neill	200-5919
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

AEP has negotiated a new IBM Enterprise License Agreement (ELA) to replace the one expiring June 30, 2013. A new ELA is required in order to stay in compliance on IBM product licenses. AEP is also able to acquire new products at significant discounts as part of this multi-year product suite. These products are listed below:

- a) Greenhat
- b) Worklight
- c) Rational
- d) Focal Point
- e) Tivoli
- f) Domino
- g) AppScan
- h) Cognos Products
- i) Emptoris
- j) QRadar
- k) Other products to be determined from the IBM catalog

The associated O&M in 2013 and 2014 will be lower than our current agreement. The remainder of the new agreement will then be consistent with IT's current level of O&M budget and spend.

### Other Alternatives Considered

No other software products with similar functionality were researched because these items were negotiated as part of the IBM ELA. Licenses are required to stay in compliance with vendor agreements with IBM.

### Conclusion

Acquire new IBM product licenses for Greenhat, Worklight, Rational, Focal Point, Tivoli, Domino, AppScan, Cognos Products, Emptoris, and other products to be determined from the IBM catalog.

### Associated/Future Projects

ITSSV1259 Lease improvement for \$250K.

Date August 14, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1268	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 8/14/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 8/14/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	7/30/2013	
1	S. Bundy B. A. MacPherson	SB 8/14/2013	
	L. L. Dieck		
	C. Zebula B. X. Tierney		
	L. M. Barton		
	L.J. Weber M.C. McCullough		
	L. Hillebrand D. E. Welch R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 8/14/13	
		8/28/13	Approved in PeopleSoft
		August 2013	Month Included in Board Package

Scanned File Name: AEPSC ITSSV1268.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITSSV1268 IT ServiceNow Licenses  
 1 Riverside Plaza, Columbus, Ohio

**Description:** ServiceNow is a workflow management system that was implemented in October, 2012. AEP Information Technology (IT) is the application owner and primary user of the system but it is also used by over 20 different business areas to either support business applications or track and report on asset information. The adoption of the tool has been very successful with users in various business areas continuing to request access on a regular basis. This CI is for increased licenses due to the increasing number of users.

The adoption of ServiceNow is enabling a significant amount of process improvement, cross training, knowledge sharing and waste reduction being addressed by the IT Lean Transformation initiative.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 860,217	\$ 860,217

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 860,217	\$ -	\$ -	\$ 860,217
<b>Total to be Authorized</b>	\$ -	\$ 860,217	\$ -	\$ -	\$ 860,217
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Start Date:** 8/25/2013      **Completion Date:** 8/25/2013      **In Service Date:** 8/25/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:**      **Included in IRC Presentation**       **Project Funded**       **Offset Source**

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 7/30/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	860,217	-	860,217
<b>Total</b>	<b>\$ 860,217</b>	<b>\$ -</b>	<b>\$ 860,217</b>


**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$	-	
Offset	\$	860,217	<i>ITCAPPROJ AEP Service Corp</i>

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See attached electronic signature	07/30/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		8/14/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Julie Standley	614-716-1974
Requisition Detail Provider	Julie Standley	614-716-1974

## Capital Improvement Approval Requisition

### Project Justification

ServiceNow is a workflow management system that was implemented in October, 2012. It replaced the BMC Remedy product used by IT and other business areas to track technical asset information and assign work to support resources.

IT is the application owner and primary user of the system but it is also used by over 20 different business areas to either support business applications or track and report on asset information. The adoption of the tool has been very successful with users in various business areas continuing to request access on a regular basis. This CI is for increased licenses due to the increasing number of users.

The adoption of ServiceNow is enabling a significant amount of process improvement, cross training, knowledge sharing and waste reduction being addressed by the IT Lean Transformation initiative. For example, the implementation of the Knowledge Management module enables subject matter experts to input information that resources on the Service Desk or on the Rapid Team can access when assisting business unit users.

Other areas of the business use ServiceNow to manage their own information technology assets, to participate in projects, to plan and manage the support of their environment, and/or to track lease information and report on asset information, including: Transmission, Human Resources, Customer & Distribution Services, Environmental Services, Fossil & Hydro Generation, Business Planning, Generation Engineering, Nuclear Generation, Real Estate & Workplace Services, Risk & Strategic, Supply Chain & Fleet Services, Security & Aviation, Treasury, Audit Services, Accounting, Safety & Health, Corporate Communications, Planning & Budgeting and Legal.

This proposal includes approximately 150 additional licenses that will be available for growth and further adoption of the tool. There is a backlog of user requests which we will be able to address with the additional licenses included in this request. Additionally, as part of the IT Lean initiative, we are reducing waste by minimizing the number of requests that come to IT in error; a significant number of requests come to IT from the business unit about applications that are supported BY the business unit resources. By adding those resources to ServiceNow, tickets will get routed immediately to the correct person, which will save a significant amount of time and enable a more cost-effective process.

### Other Alternatives Considered

There were no other alternatives considered; this is a relatively new tool that we are continuing to adopt across the enterprise.

### Conclusion

Purchase additional ServiceNow licenses to true-up the current user-base with the vendor and to enable growth and further adoption of the tool.

### Associated/Future Projects

None.



## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	-	-	-	-	-	-
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	860,217	-	860,217	860,217	-	860,217
Material	-	-	-	-	-	-
Other Cost Category	-	-	-	-	-	-
Fleet	-	-	-	-	-	-
Fringes/Incentives	-	-	-	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>860,217</b>	<b>-</b>	<b>860,217</b>	<b>860,217</b>	<b>-</b>	<b>860,217</b>

Date October 10, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1278	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 10/10/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 10/10/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	10/4/2013	
	C. Rhoades	10/4/2013	
1	S. Bundy	SB 10/10/2013	
	B. A. MacPherson		
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DLK 10/14/13	
		10/23/13	Approved in PeopleSoft
		OLF 2013	Month Included in Board Package

Scanned File Name: AEPSC ITSSV1278.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITSSV1278 Contract Labor Program  
 1 Riverside Plaza, Columbus, OH

**Description:** AEP has limited visibility into contract labor staffing levels and spend. Contract labor hiring practices are inconsistent across the enterprise and do not follow best practices. Multiple applications and processes exist across the enterprise to manage contract labor staffing. The long-term vision is to standardize processing of contract labor. The immediate focus will be on staff augmentation contract labor to drive projected repositioning savings and build a framework for continuous improvement. The Contract Labor Team has identified improvement and savings opportunities related to demand management, commercial excellence and process efficiency.

Benefits: Type 1 – Decreased Expenses of \$800,000 in 2014, \$1,000,000 in 2015, \$1,400,000 in 2016, \$1,900,000 in 2017, \$1,900,000 in 2018

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 1,206,743	\$ 1,206,743

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 189,960	\$ 1,016,783	\$ -	\$ 1,206,743
<b>Total to be Authorized</b>	\$ -	\$ 189,960	\$ 1,016,783	\$ -	\$ 1,206,743
<b>Net AEP Cash Flow</b>	\$ -	\$ 189,960	\$ 1,016,783	\$ -	\$ 1,206,743
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Start Date:** 11/1/2013      **Completion Date:** 12/31/2014      **In Service Date:** 6/30/2014

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:** Included in IRC Presentation N/A      Project Funded Yes      Offset Source AEPSC  
*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/C. Rhoades

**Approved On:** 10/4/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	1,206,743	-	1,206,743
<b>Total</b>	<b>\$ 1,206,743</b>	<b>\$ -</b>	<b>\$ 1,206,743</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ -	<i>ITCAPPROJ AEP Service Corp</i>
Offset	\$ 168,486	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See attached electronic signature	10/04/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		10/10/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Criss McCutcheon	200-1114
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

- Visibility and accountability to executives for staff augmentation contract labor spend;
- Improved spend controls with new guidelines and processes (each business unit has multiple processes for acquiring contract labor);
- Improved compliance with federal, state and local regulations;
- Sustainable savings through contract labor demand management;
  - leverage of corporate spend with fewer suppliers;
  - verifying competitive rates;
  - consistency in position classifications;
  - consistency in requisition of contract labor

These goals can be achieved through the use of the Fieldglass technology, the selected Vendor Management System (VMS). The Fieldglass benefits are the following:

- AEP will competitively bid staff augmentation positions to suppliers within Fieldglass and receive the most competitive rates possible for a specific skill set in a specific location;
- Tracking and reporting of staff augmentation contract labor.

### Other Alternatives Considered

In 2012, Information Technology (IT) selected Fieldglass as the VMS technology supplier, however the project was suspended for the McKinsey repositioning study. The selection of Fieldglass was based on the following:

- Lowest fee of all evaluated VMS providers;
- No cost for implementation;
- Ability to integrate with internal AEP Systems (i.e., PeopleSoft);
- Willingness to partner and collaborate to better understand AEP needs for cost effective solutions;
- Robust reporting capabilities;
- Ease of use from multiple platforms;

### Conclusion

Fieldglass was selected as the VMS solution for AEP due to the following considerations:

- Offered the lowest fee of all evaluated VMS providers
- No cost for implementation while the others had a fee
- Ability to integrate with internal AEP systems
- Willingness to partner and collaborate to better understand our needs and provide cost effective solutions
- Robust reporting capabilities
- Ease of use from multiple platforms
- Largest VMS provider as rated by staffing industry analysts for both staff augmentation and statement of work tracking

### Associated/Future Projects

None.

Date October 10, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1279	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 10/10/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 10/10/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	10/4/2013	
1	S. Bundy	SB 10/10/2013	
	B. A. MacPherson		
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DLK 10/14/13	
		10/23/13	Approved in PeopleSoft
		Oct 2013	Month Included in Board Package

Scanned File Name: AEPSC ITSSV1279.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITSSV1279 ProofPoint Upgrade  
 1 Riverside Plaza, Columbus, Ohio

**Description:** AEP's Mail Transfer Agent (Proofpoint) should be replaced by current technology to ensure appropriate mail routing and spam filtering.

ProofPoint Foundation is the Mail Transfer Agent (MTA) that AEP utilizes to route and filter email. When email is delivered to AEP, the external-facing ProofPoint appliances have spam and security features which eliminate over 95% of the incoming email to AEP. Without this protection, internal AEP mailboxes would be flooded with spam and fraudulent email.

AEP's Cyber Security department also manages additional security controls for our email environment such as phishing threats, malicious code and ethics quarantine via the ProofPoint products.

The internal-facing ProofPoint appliances also act as a routing agent to deliver mail to the Exchange Servers which then deliver mail to the appropriate mailbox.

The current ProofPoint appliances require replacement to continue to provide this service. Without the updated software, we will lose the ability to filter spam and fraudulent email.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 1,903,573	\$ 1,903,573

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,903,573	\$ -	\$ -	\$ 1,903,573
<b>Total to be Authorized</b>	\$ -	\$ 1,903,573	\$ -	\$ -	\$ 1,903,573
<b>Associated O&amp;M</b>	\$ -	\$ 1,550	\$ -	\$ 34,132	\$ 35,682

**Start Date:** 10/23/2013      **Completion Date:** 12/31/2013      **In Service Date:** 12/31/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:**      Included in IRC Presentation N/A      Project Funded Yes      Offset Source AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 10/4/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	1,903,573	-	1,903,573
<b>Total</b>	<b>\$ 1,903,573</b>	<b>\$ -</b>	<b>\$ 1,903,573</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ -	
Offset	\$ 1,877,474	<i>ITCAPPROJ AEP Service Corp</i>

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See attached electronic signature	10/04/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		10/10/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Julie Standley	8-200-1974
Requisition Detail Provider	Stan Bundy	8-200-3924



## Capital Improvement Approval Requisition

### Project Justification

AEP's Mail Transfer Agent (Proofpoint) should be replaced by current technology to ensure appropriate mail routing and spam filtering. Replacement coincides with the appliance renewal scheduled in October 2013 and allows for an application upgrade which will provide new functionality.

ProofPoint Foundation is the Mail Transfer Agent (MTA) that AEP utilizes to route and filter email. When email is delivered to AEP, the external-facing ProofPoint appliances have spam and security features which eliminate over 95% of the incoming email to AEP. Without this protection, internal AEP mailboxes would be flooded with spam and fraudulent email.

AEP's Cyber Security department also manages additional security controls for our email environment such as phishing threats, malicious code and ethics quarantine via the ProofPoint products.

The internal-facing ProofPoint appliances also act as a routing agent to deliver mail to the Exchange Servers which then deliver mail to the appropriate mailbox.

The current ProofPoint appliances require replacement to continue to provide this service. Without the updated software, we will lose the ability to filter spam and fraudulent email.

### **Additional features we will enable with the new environment:**

- Targeted Attack Protection – this module utilizes big data analysis techniques to identify and apply additional security controls to suspicious messages. This will assist in controlling attacks that are impossible to detect utilizing conventional scanning and verification techniques.
- Encryption – this module provides email encryption service for AEP to protect and secure sensitive email messages while still making secure email messages available to appropriate business affiliates, business partners and end users.

### **Technology Risks:**

- ProofPoint eliminates 95% of the email targeted to AEP, which keeps this traffic off of our internal Exchange (email) servers. If we were to introduce this additional load to our Exchange servers, it would eventually overload the servers and cause a disruption in mail services. The following are a few examples of critical business functions that rely on external email:
  - Call Before you Dig
  - Commercial Operations Trading
  - HR Benefits

### **Technology Benefits:**

- AEP IT will be able to continue monitoring and filtering incoming email to ensure that we are not delivering unwanted or malicious email to our end users.
- Ensure that external mail is routed to the appropriate mail box in an acceptable time frame.

## Capital Improvement Approval Requisition

### Other Alternatives Considered

Due to the significant spend to refresh our system we did review a leading competitor, Cisco IronPort which also offered a significant deal. However, the technology could not meet existing needs of the business, such as CallBeforeDig

### Conclusion

Recommending this project be funded and implemented in 2013 to coincide with the scheduled appliance renewal.

### Associated/Future Projects

None.

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	56,125	-	56,125	56,125	-	56,125
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	1,820,731	-	1,820,731	1,820,731	-	1,820,731
Material	-	-	-	-	-	-
Other Cost Category	618	-	618	618	-	618
Fleet	-	-	-	-	-	-
Fringes/Incentives	26,099	-	26,099	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>1,903,573</b>	<b>-</b>	<b>1,903,573</b>	<b>1,877,474</b>	<b>-</b>	<b>1,877,474</b>

Date December 3, 2013



Company American Electric Power Service Corporation		CI/LI/CPPI/Program Number ITSSV1284	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B 12-3-13 SB	Reviewed by CP&B 12-3-13 SB
BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.			
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	12/3/2013	(enter BU SVP and date approved) (enter Opco president and date approved)
1	S. Bowman	SB 12/3/2013	(enter PAR analyst and date reviewed)
2	D. Lynch	DL 12/3/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Darryl Lynch - 28th floor Ext 1142		
		DL 12/3/13 Dec 2013	Approved in PeopleSoft Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITSSV1284.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITSSV1284 - 2013 Data Backup Stabilization  
 1 Riverside Plaza, Columbus Ohio

**Description:** Included in this Capital Improvement Requisition is the funding necessary to expand business critical backup infrastructure at 1 Riverside Plaza and the Roanoke Disaster Recovery Data Centers. It is important to note that this is not an increase of capabilities in our Disaster Recovery function. Stabilizing and expanding the backup infrastructure is necessary to meet the increased data demands across all lines of business. Refreshing the backup infrastructure via this requisition will support implementation of virtualized/cloud computing technologies to reduce costs, manage data growth, maintain availability, and meet performance demands as applications continue to grow. We are currently experiencing over 50% failure rate on first attempt backups in the virtualized Intel area. This results in manual efforts to re-initiate backups and to determine root-cause of failure.

This Capital Improvement consists of two Backup Appliances (hardware, software and labor services) to provide backup for the virtualized Intel environment and components of the Database environment.

This project cost will be allocated to all companies based on number of workstations. AEP Generation Resources will be included in this allocation.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 1,257,140	\$ 1,257,140

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,257,140	\$ -	\$ -	\$ 1,257,140
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 1,257,140	\$ -	\$ -	\$ 1,257,140
<b>Less CIAC/Other Credits</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Net AEP Cash Flow</b>	\$ -	\$ 1,257,140	\$ -	\$ -	\$ 1,257,140
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Start Date:** 12/1/2013      **Completion Date:** 4/30/2014      **In Service Date:** 5/1/2014

**Regulatory Cost Recovery:** AEP System - \$1.3M  
 Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:** Included in IRC Presentation  No  Project Funded  Yes  Offset Source  AEPSC  
*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco      **Approved On:** 12/3/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount		-	-
This Submission	1,257,140	-	1,257,140
<b>Total</b>	<b>\$ 1,257,140</b>	<b>\$ -</b>	<b>\$ 1,257,140</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$	-	
Offset	\$	1,250,165	<i>ITCAPPROJ AEPSC</i>

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	12/03/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.	<i>D Lynch</i>	12/7/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Derek D Myers	8-200-3803
Requisition Detail Provider	Theresa Marks	8-200-3406

## Capital Improvement Approval Requisition

### Project Justification

All information that is processed at AEP data centers requires hardware in order to be saved for processing and reference by business applications. This information includes customer information, accounting transactions, plant maintenance records, employee information, etc. Information that is stored also requires separate hardware for backup of data in case of operational errors and recovery. Increased growth of data in these systems has caused a shortage of backup space for operational error recovery. In addition, new technologies around virtualization are either not supported or not functioning consistently with our backup solution that has been in place for the past 21 years. Updating the backup environment is required to: 1) reduce potential business disruptions due to equipment failures, 2) maintain support from the manufacturer and 3) potentially lower overall payments based on maintenance for older solutions.

Included in this Capital Improvement Requisition is the funding necessary to two Backup Appliances (hardware, software and labor services) to provide backup for the virtualized Intel environment and components of the Database environment. AEP will leverage the moving virtualized environments off of the existing systems to provide growth space for systems remaining on the IBM TSM based solution. Stabilizing the backup infrastructure is necessary to meet the increased data demands across all lines of business. We currently experience over a 50% failure rate on first attempt Virtualized Intel server backups. We implemented a POC smaller version of the proposed solution and it has experienced a 100% success rate over the past 2 months.

### Other Alternatives Considered

We considered expanding the current solution to handle the increased load of data coming from the production environments. However, that did not address the failures experienced in the virtualized environments.

### Conclusion

We found the proposed solution to be our best option based on three points:

- 1) It resolves the failure issue with the virtualized server backups.
- 2) It resolves the capacity issues that we are experiencing in the environment based production data growth.
- 3) The new solution is appliance based and provides new functionality.

### Associated/Future Projects

Life Cycle of two TSM backup servers identified in our study and part of our 2014 Life Cycle plans.

## Capital Improvement Approval Requisition

### Financial Detail

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	15,000	-	15,000	15,000	-	15,000
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	1,235,000	-	1,235,000	1,235,000	-	1,235,000
Material	-	-	-	-	-	-
Other Cost Category	165	-	165	165	-	165
Fleet	-	-	-	-	-	-
Fringes/Incentives	6,975	-	6,975	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>1,257,140</b>	<b>-</b>	<b>1,257,140</b>	<b>1,250,165</b>	<b>-</b>	<b>1,250,165</b>

Date November 7, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1286	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SBS 11-7-13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SBS 11-7-13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	10/30/2013	(enter BU SVP and date approved)
			(enter Opco president and date approved)
1	S. Bowman	SBS 11/7/2013	(enter PAR analyst and date reviewed)
	B. A. MacPherson		
2	D. Lynch	DL 11/8/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Darryl Lynch - 28th floor Ext 1142	11/8/13 DL 2013	Approved in PeopleSoft Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITSSV1286.pdf



## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITSSV1286 - Oracle ULA  
 1 Riverside Plaza, Columbus, OH

**Description:** This CI request is to fund the purchase of an Unlimited License Agreement (ULA) with Oracle to support AEP's Datacenter environment. The agreement will allow AEP IT the ability to deploy an unlimited number of product licenses. There will be no 'True-Up' at the end of the contract and the support costs will not increase based on our license count. Aggressive use of the unlimited deployment capability will provide AEP a lower total cost of ownership than if the same number of licenses were purchased on an as needed basis.

This request will also fund additional licenses for products where adding them to the unlimited licensing model was not financially justified. These products include monitoring and management tools that will assist in supporting the environment.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 7,323,165	\$ 7,323,165

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 7,323,165	\$ -	\$ -	\$ 7,323,165
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 7,323,165	\$ -	\$ -	\$ 7,323,165
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ 3,907,693	\$ 5,107,404	\$ 9,015,097

**Start Date:** 12/1/2013      **Completion Date:** 4/30/2014      **In Service Date:** 5/1/2014

**Regulatory Cost Recovery:** AEP System - \$7.3M  
 Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:**      **Included in IRC Presentation** N/A      **Project Funded** Yes      **Offset Source** AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 10/30/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount		-	-
This Submission	7,323,165	-	7,323,165
<b>Total</b>	<b>\$ 7,323,165</b>	<b>\$ -</b>	<b>\$ 7,323,165</b>


**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ -	ITCAPPROJ AEPSC
Offset	\$ 7,323,165	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	SVP, Business Unit	Alberto Ruocco	See electronic approval attached	10/30/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		11/8/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Derek Myeres	8-200-3803
Requisition Detail Provider	Theresa Marks	8-200-3406

## Capital Improvement Approval Requisition

### Project Justification

This CI request is to fund the purchase of an Unlimited License Agreement (ULA) with Oracle to support AEP's Datacenter environment. The agreement will allow AEP IT the ability to deploy an unlimited number of product licenses. There will be no 'True-Up' at the end of the contract and the support costs will not increase based on our license count. Aggressive use of the unlimited deployment capability will provide AEP a lower total cost of ownership than if the same number of licenses were purchased on an as needed basis.

This request will also fund additional licenses for products where adding them to the unlimited licensing model was not financially justified. These products include monitoring and management tools that will assist in supporting the environment.

### Other Alternatives Considered

AEP IT could remain on the current pay as you go model. The estimated cost over 2 years would be approximately \$13,066,813. Entering into the Unlimited Licensing Agreement (ULA) would result in an estimated cost savings of \$5,743,368.

### Conclusion

Recommending this project be funded and implemented in 2013 to coincide with the Oracle License expirations.

### Associated/Future Projects

None

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	-	-	-	-	-	-
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	7,323,165	-	7,323,165	7,323,165	-	7,323,165
Material	-	-	-	-	-	-
Other Cost Category	-	-	-	-	-	-
Fleet	-	-	-	-	-	-
Fringes/Incentives	-	-	-	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>7,323,165</b>	<b>-</b>	<b>7,323,165</b>	<b>7,323,165</b>	<b>-</b>	<b>7,323,165</b>

Date November 7, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITSSV1292	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 11-7-13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 11-7-13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	11/4/2013	(enter BU SVP and date approved)
			(enter Opco president and date approved)
1	S. Bowman	SB 11/7/2013	(enter PAR analyst and date reviewed)
	B. A. MacPherson		
2	D. Lynch	DL 11/8/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Darryl Lynch - 28th floor Ext 1142	11/8/13 DL 2013	Approved in PeopleSoft Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITSSV1292.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITSSV1292 - Microsoft Licensing  
 1 Riverside Plaza, Columbus, OH

**Description:** Included in this Capital Improvement Requisition is the funding necessary to upgrade our Windows Server Operating Systems to the current platform. Upgrading will allow Information Technology to offer a stable, supported server environment needed to host business applications for AEP. Also included is the enterprise version of Yammer, which is a collaboration tool that is used by AEP. This enterprise version will provide AEP with the ability to monitor and control content posted in Yammer by AEP employees. Lastly, this CI contains the true up of the Microsoft desktop product, which includes the Operating System and Office products.

Along with the above Capital purchases, we will also be purchasing the Microsoft support agreement, renewing our SQL licenses and virtual desktop Client Access Licenses, which will be paid for with O&M funds.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 2,639,950	\$ 2,639,950

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 2,639,950	\$ -	\$ -	\$ 2,639,950
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 2,639,950	\$ -	\$ -	\$ 2,639,950
<b>Associated O&amp;M</b>	\$ -		\$ 1,725,802	\$ 3,051,604	\$ 4,777,406

**Start Date:** 11/25/2013      **Completion Date:** 12/31/2013      **In Service Date:** 1/1/2014

**Regulatory Cost Recovery:** AEP System - \$2.6M  
 Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:**      Included in IRC Presentation N/A      Project Funded Yes      Offset Source AEPSC  
*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 11/4/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	2,639,950	-	2,639,950
<b>Total</b>	<b>\$ 2,639,950</b>	<b>\$ -</b>	<b>\$ 2,639,950</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ -	ITCAPPROJ AEPSC
Offset	\$ 2,639,950	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	SVP, Business Unit	Alberto Ruocco	See electronic approval attached	11/04/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		11/8/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Mike McGreevy	8-200-1140
Requisition Detail Provider	Theresa Marks	8-200-3406

## Capital Improvement Approval Requisition

### Project Justification

While evaluating the Microsoft roadmap and the internal AEP direction for desktop computing, it was determined that there was not a financial benefit to renewing the Microsoft Enterprise Agreement. The cost of the Enterprise agreement was \$16,393,627.

Included in this Capital Improvement Requisition is the funding necessary to upgrade our Windows Server Operating Systems to the current platform. Upgrading will allow Information Technology to offer a stable, supported server environment needed to host business applications for AEP. Also included is the enterprise version of Yammer, which is a collaboration tool that is used by AEP. This enterprise version will provide AEP with the ability to monitor and control content posted in Yammer by AEP employees. Lastly, this CI contains the true up of the Microsoft desktop product, which includes the Operating System and Office products.

Along with the above Capital purchases, we will also be purchasing the Microsoft support agreement, renewing our SQL licenses and virtual desktop Client Access Licenses, which will be paid for with O&M funds.

### Additional features we will enable with the new environment:

The enterprise version of Yammer will allow AEP to monitor and control content that is posted on Yammer.

### Other Alternatives Considered

AEP could renew the Microsoft Enterprise agreement for \$16,393,627

### Conclusion

Recommending this project be funded and implemented in 2013 to coincide with the Microsoft License expirations.

### Associated/Future Projects

None



## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	-	-	-	-	-	-
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	2,639,950	-	2,639,950	2,639,950	-	2,639,950
Material	-	-	-	-	-	-
Other Cost Category	-	-	-	-	-	-
Fleet	-	-	-	-	-	-
Fringes/Incentives	-	-	-	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>2,639,950</b>	<b>-</b>	<b>2,639,950</b>	<b>2,639,950</b>	<b>-</b>	<b>2,639,950</b>

Date December 10, 2013



Company American Electric Power Service Corporation		CI/LI/CP/Program Number ITSSV1299	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B 12-10-13 SB	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.
		Reviewed by CP&B 12-10-13 SB	
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	12/10/2013	(enter BU SVP and date approved) (enter Opco president and date approved)
1	S. Bowman	SB 12/10/2013	(enter PAR analyst and date reviewed)
	B. A. MacPherson		
2	D. Lynch	DL 12/10/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Darryl Lynch - 28th floor Ext 1142		
		12/18/13 Dec 2013	Approved in PeopleSoft Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

Scanned File Name: AEPSC ITSSV1299.pdf

## Capital Improvement Approval Requisition

**Company:** AEP Service Corporation

**Version 1**

**Project :** ITSSV1299 - LANDesk upgrade  
 1 Riverside Plaza, Columbus Ohio

**Description:** Included in this Capital Improvement Requisition is the funding necessary to upgrade our LANDesk management system.

Currently AEP utilizes a combination of LANDesk, Microsoft System Center Configuration Manager (SCCM) and Microsoft Windows Server Update Services (WSUS) to manage the workstation fleet. LANDesk and SCCM are utilized for image and application publishing, WSUS is utilized for Microsoft patching and LANDesk is utilized for non-Microsoft patching. All of this functionality can be moved to LANDesk which will eliminate multiple consoles and systems to manage. By upgrading to the latest version of LANDesk, AEP will also receive the ability to complete data analytics on the deployed software inventory. This will allow AEP IT to accurately report software installation and usage. LANDesk provides a dashboard view of all security vulnerabilities and licensing risks. Mobility support is also a new feature that will be implemented, providing AEP the ability to manage the growing number of mobile devices on the network, such as iPhones and iPads.

This project cost will be allocated to all companies based on number of workstations. AEP Generation Resources will be included in this allocation.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 738,726	\$ 738,726

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ -	\$ 738,726	\$ -	\$ 738,726
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ -	\$ 738,726	\$ -	\$ 738,726
<b>Less CIAC/Other Credits</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Net AEP Cash Flow</b>	\$ -	\$ -	\$ 738,726	\$ -	\$ 738,726
<b>Associated O&amp;M</b>	\$ -		\$ 276,915	\$ 553,830	\$ 830,745

<b>Start Date:</b>	12/18/2013	<b>Completion Date:</b>	1/31/2014	<b>In Service Date:</b>	1/31/2014
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**Regulatory Cost Recovery:** AEP System - \$0.7M  
 Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

<b>Funding:</b>	Included in IRC Presentation	N/A	Project Funded	Yes	Offset Source	AEPSC
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*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco **Approved On:** 12/10/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	738,726	-	738,726
<b>Total</b>	<b>\$ 738,726</b>	<b>\$ -</b>	<b>\$ 738,726</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ -	ITCAPPROJ AEPSC
Offset	\$ -	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	12/10/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		12/10/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Mike McGreevy	8-200-1140
Requisition Detail Provider	Theresa Marks	8-200-3406

## Capital Improvement Approval Requisition

### Project Justification

The Complex Workstation team currently manages three separate products to support and inventory the workstation fleet deployed at AEP. These systems do not interact with each other, creating multiple touch points to complete activities such as patching and application deployment. By consolidating all of these activities to LANDesk, two of the systems can be retired. In the current environment, in order to understand the deployed applications, it takes many days to normalize the data retrieved by the software inventory tools before it can be utilized for reporting, metrics and planning activities. LANDesk will now provide us with a content service which will normalize this data automatically, saving AEP hundreds of hours completing this work manually and making this reporting an automatic feature. AEP will also have access to SmartView, which is a dashboard highlighting the current security vulnerabilities with the deployed applications and identifies licensing risks based on the deployed applications.

An area of growing concern for AEP is how to manage the mobile devices that are spreading rapidly on the network. Currently, AEP only utilizes LANDesk to manage Windows devices, however this upgrade will provide the ability to manage and support Apple iOS and Android devices.

In addition the following features will be enabled with the new environment:

- Patch Management
- Mobile Device management
- SmartView
- Data Analytics

### Other Alternatives Considered

AEP could continue to manage and pay support for 3 separate systems.

### Conclusion

Recommending this project be funded and implemented in 2014 to coincide with the LANDesk maintenance renewal.

### Associated/Future Projects

None

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	26,070	-	26,070	26,070	-	26,070
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	700,246	-	700,246	700,246	-	700,246
Material	-	-	-	-	-	-
Other Cost Category	287	-	287	287	-	287
Fleet	-	-	-	-	-	-
Fringes/Incentives	12,123	-	12,123	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>738,726</b>	<b>-</b>	<b>738,726</b>	<b>726,603</b>	<b>-</b>	<b>726,603</b>

Date December 9, 2013



Company American Electric Power Service Corporation		CI/LI/CP/Program Number ITSSV1302	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B SB 12/9/13	Reviewed by CP&B SB 12/9/13
BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.			
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	12/9/2013	
1	S. Bundy B. A. MacPherson	SB 12/9/2013	
	L. L. Dieck		
	C. Zebula B. X. Tierney		
	L. M. Barton		
	L.J. Weber M.C. McCullough		
	L. Hillebrand D. E. Welch R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 12/9/13	
		12/8/13	Approved in PeopleSoft
		Dec 2013	Month Included in Board Package

Scanned File Name: AEPSC ITSSV1302.pdf



## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITSSV1302 - VMware Enterprise License Agreement  
 1 Riverside Plaza, Columbus, OH

**Description:** This Capital Improvement (CI) request is to fund the purchase of an Enterprise License Agreement (ELA) with VMware to support AEP's Datacenter environment. The agreement will allow AEP Information Technology (IT) the ability to deploy an unlimited number of product licenses. This agreement provided for the maintenance of the existing deployed VMware environment (currently \$256,000 per year). The agreement will allow AEP IT the ability to deploy \$5.9M of product licenses over a 5 year period at a discount of 54% and the support costs for these products are included. There will be no 'True-Up' at the end of the contract and the support costs will not increase based on our license count. This also guarantees AEP a 54% discount rate on additional software during the 5 year period. Historically AEP has experienced a 20% discount on non-ELA purchases and a 40% discount on ELA purchases. This purchase also includes consulting services for implementing an automated failover environment to a remote site, proactive performance management and implementation of analytics based utilization resource model.

This project cost will be allocated to all companies based on number of workstations. AEP Generation Resources will be included in this allocation.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 4,945,893	\$ 4,945,893

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ -	\$ 1,949,929	\$ 2,995,964	\$ 4,945,893
<b>Total to be Authorized</b>	\$ -	\$ -	\$ 1,949,929	\$ 2,995,964	\$ 4,945,893
<b>Net AEP Cash Flow</b>	\$ -	\$ -	\$ 1,949,929	\$ 2,995,964	\$ 4,945,893
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ 185,071	\$ 740,295	\$ 925,366

**Start Date:** 12/15/2013      **Completion Date:** 1/15/2015      **In Service Date:** 1/15/2018

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:** Included in IRC Presentation N/A      Project Funded Yes      Offset Source AEPSC  
*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco      **Approved On:** 12/9/2013



## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount		-	-
This Submission	4,945,893	-	4,945,893
<b>Total</b>	<b>\$ 4,945,893</b>	<b>\$ -</b>	<b>\$ 4,945,893</b>


**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$	-	
Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	12/09/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		12/19/17

**Project Contacts**

Contact	Name	Telephone
Project Manager	Derek Myeres	8-200-3803
Requisition Detail Provider	Theresa Marks	8-200-3406

## **Capital Improvement Approval Requisition**

### **Project Justification**

This Capital Improvement (CI) request is to fund the purchase of an Enterprise License Agreement (ELA) with VMware to support AEP's Datacenter environment. The agreement will allow AEP Information Technology (IT) the ability to deploy an unlimited number of product licenses. This agreement provided for the maintenance of the existing deployed VMware environment (currently \$256,000 per year). The agreement will allow AEP IT the ability to deploy \$5.9m of product licenses over a 5 year period at a discount of 54% and the support costs for these products are included. There will be no 'True-Up' at the end of the contract and the support costs will not increase based on our license count. This also guarantees AEP a 54% discount rate on additional software during the 5 year period. Historical AEP has experienced a 20% discount on non-ELA purchases and a 40% discount on ELA purchases. This purchase also includes consulting services for implementing an automated failover environment to a remote site, proactive performance management and implementation of analytics based utilization resource model.

### **Other Alternatives Considered**

AEP IT could remain on the current pay-as-you-go model. Over the last four years AEP has averaged \$1.6M in O&M expenses for licenses, maintenance and consulting services. This agreement splits the software licensing and consulting services to capital expenses for \$4.9M and five \$185K maintenance payments over the five year agreement. Maintenance on the existing environment alone would be \$256K of O&M per year without the agreement.

### **Conclusion**

Recommending this project be funded and implemented in 2013 to coincide with the current VMware ELA expiration.

### **Associated/Future Projects**

None

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	-	-	-	-	-	-
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	4,945,893	-	4,945,893	4,945,893	-	4,945,893
Material	-	-	-	-	-	-
Other Cost Category	-	-	-	-	-	-
Fleet	-	-	-	-	-	-
Fringes/Incentives	-	-	-	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>4,945,893</b>	<b>-</b>	<b>4,945,893</b>	<b>4,945,893</b>	<b>-</b>	<b>4,945,893</b>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 2</b>																																										
<b>Project:</b>	ITSSV1309 - Lean Catalog - - Revision																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>The AEP Corporate Catalog serves as the gateway to strategic procurement and operational excellence. It is the repository for critical data with respect to procurement, inventory, quality assurance and quality control requirements, accounting, and other functions. It also maintains critical links to internal work management systems within AEP and is the link between our inventory and the material provided by suppliers.</p> <p>This project will enable several improvements to the catalog as identified by the lean initiative executed by the Operations and Performance Transformation team for the Supply Chain and Procurement organizations. Improvements to be gained by this project include data cleansing, process improvement, implementation of governance, and automated solutions that improve our capability to standardize materials, search the catalog, audit catalog changes, and improve usability.</p> <p>Benefits of obtaining these improvements are expected to yield savings of \$16.5M due to inventory reduction, purchase reductions, and decreases in descriptive spend.</p> <p>This project cost will be allocated to all companies based on number of purchase orders. AEP Generation Resources will be included in this allocation.</p>																																											
<b>Revision Reason:</b>	<p>The project team has developed a commit budget for the project that exceeds the original high level estimate, which was created before the Capital Excellence process was established. Below is a summary of the differences encountered:</p> <ul style="list-style-type: none"> <li>• Deeper analysis uncovered need for multiple instances of the application to support our multiple catalog system environment (\$140K)</li> <li>• Project contingency established based on the Capital Excellence process (\$125K - possibility of some or all not needed)</li> <li>• Fringes were higher than original estimate (\$139K - these fringes are not part of CI request, but are considered in the need for a CI revision)</li> </ul>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$1,728,570</td> <td>\$398,929</td> <td>\$2,127,499</td> </tr> <tr style="background-color: #ffff00;"> <td colspan="2"><b>Total</b></td> <td><b>\$1,728,570</b></td> <td><b>\$398,929</b></td> <td><b>\$2,127,499</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$1,728,570	\$398,929	\$2,127,499	<b>Total</b>		<b>\$1,728,570</b>	<b>\$398,929</b>	<b>\$2,127,499</b>																											
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<b>Total</b>		<b>\$1,728,570</b>	<b>\$398,929</b>	<b>\$2,127,499</b>																																								
<b>Cash Flow:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 15%;">Prior Years</th> <th style="width: 15%;">2014</th> <th style="width: 15%;">2015</th> <th style="width: 15%;">Future Years</th> <th style="width: 20%;">Total</th> </tr> </thead> <tbody> <tr> <td>Capital</td> <td>\$0</td> <td>\$2,127,499</td> <td>\$0</td> <td>\$0</td> <td>\$2,127,499</td> </tr> <tr> <td>Removal</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr style="background-color: #ffff00;"> <td><b>Total To Be Authorized</b></td> <td><b>\$0</b></td> <td><b>\$2,127,499</b></td> <td><b>\$0</b></td> <td><b>\$0</b></td> <td><b>\$2,127,499</b></td> </tr> <tr> <td>Less CIAC</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>Net AEP Cash Flow</td> <td>\$0</td> <td>\$2,127,499</td> <td>\$0</td> <td>\$0</td> <td>\$2,127,499</td> </tr> <tr> <td>Associated O&amp;M</td> <td>\$0</td> <td>\$378,260</td> <td>\$0</td> <td>\$0</td> <td>\$378,260</td> </tr> </tbody> </table>			Prior Years	2014	2015	Future Years	Total	Capital	\$0	\$2,127,499	\$0	\$0	\$2,127,499	Removal	\$0	\$0	\$0	\$0	\$0	<b>Total To Be Authorized</b>	<b>\$0</b>	<b>\$2,127,499</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,127,499</b>	Less CIAC	\$0	\$0	\$0	\$0	\$0	Net AEP Cash Flow	\$0	\$2,127,499	\$0	\$0	\$2,127,499	Associated O&M	\$0	\$378,260	\$0	\$0	\$378,260
	Prior Years	2014	2015	Future Years	Total																																							
Capital	\$0	\$2,127,499	\$0	\$0	\$2,127,499																																							
Removal	\$0	\$0	\$0	\$0	\$0																																							
<b>Total To Be Authorized</b>	<b>\$0</b>	<b>\$2,127,499</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,127,499</b>																																							
Less CIAC	\$0	\$0	\$0	\$0	\$0																																							
Net AEP Cash Flow	\$0	\$2,127,499	\$0	\$0	\$2,127,499																																							
Associated O&M	\$0	\$378,260	\$0	\$0	\$378,260																																							
<b>Project Dates:</b>	<b>Start Date :</b> 02/01/2014 <b>In Service Date :</b> 11/28/2014 <b>Completion Date:</b> 12/31/2014																																											
<b>Regulatory Cost Recovery:</b>	AEP System -- \$2.1M (100%)  Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 11/07/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$1,500,000	\$0	\$0	\$1,500,000
	Offsets Required	\$0	\$414,169	\$0	\$0	\$414,169
	<b>Total</b>	<b>\$0</b>	<b>\$1,914,169</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,914,169</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Stanley J Bundy	10/09/2014
		Approved	Christopher K Duffy	10/09/2014
		Bypassed	Rich Bale	10/23/2014
		Approved	Julie A Standley	10/24/2014
		Approved	Michael A Rozsa	10/24/2014
		Approved	Alberto G Ruocco	10/24/2014
		Approved	Craig T Rhoades	10/30/2014
		Approved	Randolph J Ware	10/30/2014
		Approved	Alesia A Austin	11/07/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	MAHOOD,LORI L
		Project Manager	SUREPEDDI,VENUGOPAL

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>Multiple issues with catalog data have been present since the AEP CSW merger in 2002. The data and technical challenges of the catalog make it difficult to leverage its content to the fullest extent. The current state of the AEP Corporate Catalog data and associated technology is costing the company millions of dollars annually in unnecessary spend, plus associated costs, and losses in efficiency for several thousand users of the AEP Corporate Catalog. There are three primary savings objectives to be achieved through implementation of this project. The Supply Chain and Procurement organizations have gone through extensive study of potential savings in order to accurately forecast projected savings.</p> <p><u>Reduce Descriptive Spend:</u> Through providing improved catalog search capability and data cleansing this project will enable increased utilization of existing catalog items and in turn reduce descriptive spend for the Generation organization. By doing so, this project will enable the organization to achieve efficiencies in procurement that are projected to equate to \$8.6m on an ongoing basis.</p> <p><u>Inventory Reduction:</u> By providing a robust search engine along with improved data integrity achieved through data cleansing, the project will result in reduction of inventory. The team has identified savings projections in the amount of \$6.4m to be measured by Inventory Category Management.</p> <p><u>Purchase Reduction:</u> Clean catalog data will reduce redundant purchase of items currently stocked. By enabling users to utilize existing stock as opposed to continuing to purchase additional items the team forecasts savings in the amount of \$1.5m on an ongoing basis.</p>
<b>Other Alternatives Considered:</b>	<p>The team has leveraged peers throughout the utility industry as well as the Gartner Group to understand best practices surrounding use of a corporate catalog as well as data cleansing capabilities. The result of these analyses was execution of a request for proposal to further evaluate automation tools as well as professional services organizations in the Catalog and Inventory market place.</p> <p>Ariba - Provides a user friendly interface and would be excellent for direct purchases (non-inventory), but is not designed for "shopping" from inventory and it does not contain a workflow capability for creating catalog requests.</p> <p>IHS - This option is least expensive and is familiar to our catalog analysts and delivers basic requirements. However it does not support our designed workflow and does not interface with Asset Suite.</p> <p>Sparesfinder - This option contains most of the functions available from similar tools on the market but would require AEP to adopt their templates. There are no gains over our existing tools that would justify the cost to implement and maintain and the user interface is not intuitive.</p>
<b>Conclusion:</b>	<p>Execute 12-18 month project that will implement Verdantis Integrity catalog search tool and Verdantis Harmonize data cleansing tool and services. Implement catalog governance as well as process improvements, and ensure benefits realization measurements are in place capturing savings achieved following completion of the project.</p>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 2</b>																																										
<b>Project:</b>	ITSSV1315 - IT Infrastructure Modernization - - Revision																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>AEP currently has approximately 1,800 Window Server 2003 assets and 3,240 web farm sites. Many of these business applications and web sites are hosted on virtual servers ("VMWare"), rather than physical servers. Microsoft will no longer provide vulnerability patches for the Windows Server 2003 operating system after July 2015. Approximately half of the Windows server fleet and existing web farms are impacted.</p> <p>There is no longer any current physical hardware which supports Windows Server 2003. We do not have the ability to buy identical physical hardware. If a physical server experiences an issue, then newer hardware will need to be deployed. This may cause unexpected issues with the performance of an application or web site.</p> <p>In order to ensure that we can support our business units in a secure manner, the project's goals are to:</p> <ol style="list-style-type: none"> <li>1. Eliminate the Windows Server 2003 or earlier operating system and move to the Windows Server 2012 operating system</li> <li>2. Increase capacity for "High Tier" and "Production" VMWare farms to continue existing performance levels and allow for growth/new demand</li> <li>3. Upgrade the VMWare software to support new development and the Windows Server 2012 operating system</li> <li>4. Upgrade the Roanoke Virtual Desktop Interface ("VDI") in order to have redundancy for the virtual desktops</li> </ol> <p>This effort is a planning proposal and includes full implementation of the VMWare upgrade. Total estimated cost of all phases is \$2.8M.</p>																																											
<b>Revision Reason:</b>	<p>Initial CI was for a planning proposal and included full implementation of the VMWare upgrade. Planning is complete, and this CI revision is the execution phase of migrating impacted applications to a supported Microsoft operating system. The revised total estimated cost is now \$6.6M. The increase over the total estimated cost of \$2.8M provided in the Original Justification is attributed to the following: through our planning efforts, the team identified additional applications to be included in scope, additional technology investments in the environment to reduce our physical hardware footprint, and additional contractors as resources to the project due to in-flight efforts.</p>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">Company</th> <th style="width: 25%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$1,211,441</td> <td>\$5,422,176</td> <td>\$6,633,617</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$1,211,441</b></td> <td><b>\$5,422,176</b></td> <td><b>\$6,633,617</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$1,211,441	\$5,422,176	\$6,633,617	<b>Total</b>		<b>\$1,211,441</b>	<b>\$5,422,176</b>	<b>\$6,633,617</b>																											
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<b>Project Dates:</b>	<b>Start Date :</b> 04/01/2014 <b>In Service Date :</b> 12/31/2015 <b>Completion Date:</b> 12/31/2015																																											
<b>Regulatory Cost Recovery:</b>	<p><u>AEP System</u> -- \$6.6M (100%)</p> <p>Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.</p>																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 01/13/2015																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2015</b>	<b>2016</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$812,362	\$3,928,363	\$0	\$0	\$4,740,725
	<b>Total</b>	<b>\$812,362</b>	<b>\$3,928,363</b>	<b>\$0</b>	<b>\$0</b>	<b>\$4,740,725</b>
<b>Required Signatures:</b>	<b>Status</b>		<b>Name</b>		<b>Date</b>	
	Approved		Stanley J Bundy		01/06/2015	
	Approved		Jeffrey P White		01/06/2015	
	Bypassed		Julie A Standley		01/07/2015	
	Approved		Michael J McGreevy		01/07/2015	
	Approved		Michael A Rozsa		01/07/2015	
	Approved		Alberto G Ruocco		01/07/2015	
	Approved		Randolph J Ware		01/07/2015	
	Approved		Alesia A Austin		01/13/2015	
<b>Project Contacts:</b>	<b>Type</b>		<b>Name</b>			
	Detail Provider		FOX, JENNIFER S			
	Project Manager		BENDERT, TERRI D			



## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<ul style="list-style-type: none"> <li>• Microsoft declared July 2015 is the end of life for the Windows Server 2003 Operating System. After this date, Microsoft will no longer provide any security patches / maintenance support for the operating system.</li> <li>• The aspect of the technology stack is a risk related to security vulnerability of applications and web sites.</li> <li>• AEP currently has approximately half the Windows server fleet and existing web farm on Windows Server 2003 or earlier - approximately 1,800 application candidates and 3,240 web farm sites.</li> <li>• We do not have the ability to buy identical physical hardware. If a physical server experiences an issue, then newer hardware will need to be deployed. This may cause unexpected issues with the performance of an application or web site. If this is a critical application, we may cause a service disruption.</li> <li>• The shared server environment has an immediate need for capacity; additional deployments will begin to impact overall performance of the entire farm, which will result in degraded service to existing applications and/or prevent any new applications from being deployed.</li> <li>• The Windows Server 2012 operating system will not run on the existing version of the shared server environment without crashing applications running on that environment.</li> </ul>
<b>Other Alternatives Considered:</b>	<p>The alternative is to take no action. The weaknesses of this option include:</p> <ul style="list-style-type: none"> <li>• May disrupt the ability to support business unit applications</li> <li>• May not have the capacity to deploy new or any enhanced applications</li> <li>• Increase risk of not having ability to replace existing hardware with like hardware</li> <li>• Issues with the operating system may cause a business disruption to critical applications</li> <li>• Risk of external security incidents would be increased post July 2015; may result in visible security breaches to the public and regulatory agencies</li> </ul>
<b>Conclusion:</b>	<ul style="list-style-type: none"> <li>• In order for IT to maintain existing demand and prepare for future initiatives, the server infrastructure must be brought up to date</li> <li>• Infrastructure modernization will include running the most up-to-date operating systems that are supported by the vendor and providing capacity for maintaining performance expectations</li> <li>• Budget request notes:       <ol style="list-style-type: none"> <li>1. Due to the high-level estimating detail at this time, the budget request includes hours only for the planning effort for the Windows Server 2003 operating system upgrade and full implementation of the VMWare upgrade</li> <li>2. After planning is complete (planned fourth quarter 2014), the team will request additional funds for the execution phase</li> <li>3. Ballpark estimate of remaining funds needed after the planning phase is \$1.6M</li> </ol> </li> <li>• This effort will maximize the value AEP receives from our existing technology investments as well as planning for future growth</li> </ul>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITSSV1319 - Storage Lifecycle 2014 -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>This project proposes to upgrade AEP's storage environment, in conjunction with the replacement of the hardware due to lifecycle longevity. Storage is the backend to all databases, e-mail, virtual desktops, and applications on virtual and physical servers. All data resides in storage for daily usage, and all data that is backed-up or archived is also using the storage environment. It is a critical component in our disaster recovery / business continuity architecture as it is necessary for daily operations, compliance, and audits.</p> <p>In order for IT to continue to provide service to our current business unit customers and new business unit customers, this project is required to increase capacity for applications, databases, and messaging. IT's current capacity constraints are forecasting a substantial storage shortfall by year end of 2014.</p> <p>This project will also serve as a predecessor to the High Availability Computing Environment initiative. AEP's current storage environment is not compliant to be used in the manner required by a high availability environment. This project will upgrade the environment to the architecture that is required.</p> <p>As part of our negotiations with the storage vendor EMC, there is an opportunity to reduce AEP's O&amp;M expenses with EMC for 2014-2016 by investing in a substantial upgrade of the storage environment.</p> <p>This Capital Improvement is associated with the Lease Improvement request ITSSV1320.</p>																																											
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<b>Project Dates:</b>	<b>Start Date :</b> 05/19/2014 <b>In Service Date :</b> 04/30/2015 <b>Completion Date:</b> 04/30/2015																																											
<b>Regulatory Cost Recovery:</b>	Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> No	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 06/13/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$6,948,079	\$95,287	\$0	\$7,043,366
	<b>Total</b>	<b>\$0</b>	<b>\$6,948,079</b>	<b>\$95,287</b>	<b>\$0</b>	<b>\$7,043,366</b>
<b>Required Signatures:</b>	<b>Status</b>		<b>Name</b>		<b>Date</b>	
	Approved		Stanley J Bundy		06/05/2014	
	Approved		Jeffrey P White		06/06/2014	
	Approved		Alberto G Ruocco		06/09/2014	
	Approved		Randolph J Ware		06/10/2014	
	Approved		Jenifer L Fischer		06/13/2014	
<b>Project Contacts:</b>	<b>Type</b>		<b>Name</b>			
	Detail Provider		FOX,JENNIFER S			
	Project Manager		FRANCIS,TARA L			

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<ul style="list-style-type: none"> <li>• This project proposes to upgrade AEP's storage environment, in conjunction with the replacement of the hardware due to lifecycle longevity.</li> <li>• IT's current capacity is forecasting a substantial storage shortfall by year end of 2014.</li> <li>• AEP currently has a storage rack on loan from our storage vendor (EMC), which is actively being used as a short-term solution while preparing for the lifecycle replacements. EMC is the vendor that provides the storage appliances and capacity for the enterprise AEP technology stack.</li> <li>• If IT does not have enough storage, then the end users in all business units will be impacted as they will not have room for data saved in file shares, e-mail, and critical customer and business records within the majority of applications.</li> <li>• This project is a necessary step to upgrading our existing storage environment to be integrated into a new High Availability Computing Environment. Our current hardware is not compliant to be used in that manner.</li> <li>• This project also increases the storage capacity in four regional locations: Canton, Ohio; Charleston, West Virginia; Shreveport, Louisiana; and Ft. Wayne, Indiana. This will allow IT to set up regional virtual server environments which supports the remote server consolidation strategy.</li> <li>• This Capital Improvement is associated with the Lease Improvement request ITSSV1320.</li> </ul>
<b>Other Alternatives Considered:</b>	<p>The alternative is to take no action. The weaknesses of this option include:</p> <ul style="list-style-type: none"> <li>• May disrupt the ability to support business unit applications</li> <li>• Will experience disruption of data within six months based on current risk</li> <li>• Will not save 2014 O&amp;M expenses of \$2.2M in 2014</li> <li>• Will be obligated to pay for loaner equipment in arrears</li> <li>• Will not be able to support the High Availability Computing Environment</li> </ul>
<b>Conclusion:</b>	<ul style="list-style-type: none"> <li>• In order to achieve O&amp;M savings for 2014-2016, AEP needs to purchase the storage appliances by June 30, 2014</li> <li>• In order for IT to maintain existing demand and prepare for future initiatives, the storage environment must be upgraded</li> <li>• The High Availability Computing Environment improvements are dependent on the implementation of the new equipment. The existing hardware cannot be configured to work in the manner required for the design.</li> <li>• This effort will maximize the value AEP receives from our existing technology investments as well as planning for future growth</li> </ul>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITSSV1322 - SCPFO - Category Management Software (Power Advocate) -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>The Supply Chain, Procurement, and Fleet organizations are undergoing a strategic transformation and have developed a 3-5 year transition plan. As part of that strategic plan the organization has implemented a Category Management model to work closely with each area of the AEP organization to develop strategic procurement initiatives. This project would allow the organization to purchase a tool that is an industry leader supporting excellence in Category Management through analytics, market and cost intelligence. The software will help AEP accomplish the following goals:</p> <ul style="list-style-type: none"> <li>- Create additional negotiation power through market insights</li> <li>- Obtain predictive cost intelligence to mitigate risk and potential cost impacts</li> <li>- Create a more efficient Procurement analysis phase (speed to deliver results)</li> <li>- Increase management of spend</li> </ul> <p>Procurement has developed methodology to be used by Category Managers that gathers and analyzes data specific to the category and sub-categories they manage. This includes information such as how a piece of equipment such as a transformer is built so that the true cost of materials and labor required to build it are a known quantity, what vendors are in the market, and how much of their portfolio represents AEP business. PowerAdvocate's Category Intelligence tool fuels all of that external information as well as absorbing spend intelligence data that AEP obtains from a current investment in Ariba Spend Analytics. Examples of data include predictive indicators on all indexes, a forecast of costs, current event information, and pricing on commodities that drive the price of the item. PowerAdvocate's Category Intelligence tool also provides a common format from which we can provide profile information to business partners within AEP allowing for consistency in delivery of information.</p>																																											
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<b>Cash Flow:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 12.5%;">Prior Years</th> <th style="width: 12.5%;">2014</th> <th style="width: 12.5%;">2015</th> <th style="width: 12.5%;">Future Years</th> <th style="width: 12.5%;">Total</th> </tr> </thead> <tbody> <tr> <td>Capital</td> <td>\$0</td> <td>\$900,166</td> <td>\$0</td> <td>\$0</td> <td>\$900,166</td> </tr> <tr> <td>Removal</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr style="background-color: yellow;"> <td><b>Total To Be Authorized</b></td> <td><b>\$0</b></td> <td><b>\$900,166</b></td> <td><b>\$0</b></td> <td><b>\$0</b></td> <td><b>\$900,166</b></td> </tr> <tr> <td>Less CIAC</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>Net AEP Cash Flow</td> <td>\$0</td> <td>\$900,166</td> <td>\$0</td> <td>\$0</td> <td>\$900,166</td> </tr> <tr> <td>Associated O&amp;M</td> <td>\$0</td> <td>\$147,000</td> <td>\$0</td> <td>\$0</td> <td>\$147,000</td> </tr> </tbody> </table>			Prior Years	2014	2015	Future Years	Total	Capital	\$0	\$900,166	\$0	\$0	\$900,166	Removal	\$0	\$0	\$0	\$0	\$0	<b>Total To Be Authorized</b>	<b>\$0</b>	<b>\$900,166</b>	<b>\$0</b>	<b>\$0</b>	<b>\$900,166</b>	Less CIAC	\$0	\$0	\$0	\$0	\$0	Net AEP Cash Flow	\$0	\$900,166	\$0	\$0	\$900,166	Associated O&M	\$0	\$147,000	\$0	\$0	\$147,000
	Prior Years	2014	2015	Future Years	Total																																							
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Associated O&M	\$0	\$147,000	\$0	\$0	\$147,000																																							
<b>Project Dates:</b>	<b>Start Date :</b> 06/23/2014 <b>In Service Date :</b> 09/30/2014 <b>Completion Date:</b> 10/30/2014																																											
<b>Regulatory Cost Recovery:</b>	Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> No	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 06/12/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$897,376	\$0	\$0	\$897,376
	<b>Total</b>	<b>\$0</b>	<b>\$897,376</b>	<b>\$0</b>	<b>\$0</b>	<b>\$897,376</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Stanley J Bundy	06/06/2014
		Approved	Jeffrey P White	06/06/2014
		Approved	Julie A Standley	06/09/2014
		Bypassed	Scott A Pannelle	06/10/2014
		Bypassed	Craig T Rhoades	06/10/2014
		Approved	Alberto G Ruocco	06/10/2014
		Approved	Randolph J Ware	06/10/2014
		Approved	Jenifer L Fischer	06/12/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	MAHOOD,LORI L
		Project Manager	MAHOOD,LORI L

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>AEP Procurement has chosen a software solution provided by PowerAdvocate that will allow the organization to move from a traditional procurement process to an integrated and flexible process supported by industry data and technology. The Category Intelligence application will allow the organization to gather market insight and improve decision making and execution of events. It will significantly reduce the manual administrative burden associated with data gathering and deliverable development, thereby increasing the amount of AEP spend under management. Additionally, the tool will bring what has typically been disjointed information under a single umbrella application making it more visible, more consistent, and ensuring business unit leaders are engaged more effectively. With Category Intelligence AEP will have detailed analyses and forecasts for both internal and market data affecting managed categories, and a scalable, web-based dashboard for automating the category management framework. This combination will enable real-time communication between category management teams and their business unit partners across the organization. By alleviating the manual effort for assembling this data and keeping it updated the category management team can now focus on more strategic efforts, which will help drive overall organizational impact.</p> <p>The primary justification for purchase of this tool and services from PowerAdvocate is that it plays a key role in transformation of the organization over the next 3 - 5 years. This transformation is driven by the need for AEP to achieve significant operations and maintenance savings, of which \$7.5m in 2015 and \$14m in 2016, is the direct responsibility of our Chief Procurement Officer.</p>
<b>Other Alternatives Considered:</b>	<p>Operate current state - AEP procurement is responsible for achieving \$7.5m in O&amp;M savings in 2015 and \$14m in 2016. In order to achieve this savings operating in current state mode puts places the timing of these savings at risk. Power Advocate is the only known source to provide Cost and Market Intelligence for Products and Services specifically used in the electric utility industry. This tool provides should-cost models with future year predictive pricing indicators along with supplier market share information. The only other sources for this type of information are consultants who provide ad-hoc market research at a substantial price. Power Advocate has a relationship with the majority of large electric utilities, which allows constant refreshing and publishing of the data.</p>
<b>Conclusion:</b>	<p>Considering the lack of other viable alternatives and the significant need for this organization to achieve its transformational goals, this project will implement the PowerAdvocate solution in 2014 and enable the Category Management organization to achieve significant savings for the AEP Corporation.</p>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITSSV1332 - PSEC - BadgePoint Replacement -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>This project will purchase a new physical access management (PAM) system to replace BadgePoint. The PAM application is utilized by AEP Physical Security to allow employees and contractors to request ID badges, upload photos, request building or room access, and activate or deactivate ID cards. The system is also used to route submitted requests for manager and/or room owner approval, automate provisioning of approved access requests, remove access, and provide quarterly access reviews as required for NERC and Sarbanes Oxley compliance.</p> <p>This request is based on a class 5 estimate and therefore has some risk of budget changes.</p>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$577,156</td> <td>\$577,156</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$577,156</b></td> <td><b>\$577,156</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$577,156	\$577,156	<b>Total</b>		<b>\$0</b>	<b>\$577,156</b>	<b>\$577,156</b>																											
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Associated O&M	\$0	\$0	\$134,105	\$804,630	\$938,735																																							
<b>Project Dates:</b>	<b>Start Date :</b> 07/28/2014 <b>In Service Date :</b> 12/01/2014 <b>Completion Date:</b> 01/30/2015																																											
<b>Regulatory Cost Recovery:</b>	AEP System -- \$0.6M Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 07/15/2014																																											



## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$535,608	\$0	\$0	\$535,608
	<b>Total</b>	<b>\$0</b>	<b>\$535,608</b>	<b>\$0</b>	<b>\$0</b>	<b>\$535,608</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Stephanie L Bowman	07/10/2014
		Approved	Christopher K Duffy	07/10/2014
		Approved	Alberto G Ruocco	07/11/2014
		Approved	Randolph J Ware	07/14/2014
		Approved	Jenifer L Fischer	07/15/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	MAHOOD, LORI L
		Project Manager	

## Capital Improvement Approval Requisition

### Additional Information

<p><b>Project Justification:</b></p>	<p>BadgePoint is a physical access management (PAM) application that is utilized by AEP Physical Security to allow employees and contractors to request ID badges, upload photos, request building or room access, and activate or deactivate ID cards. The system is also used to route submitted requests for manager and/or room owner approval, automate provisioning of approved access requests, remove access, and provide quarterly access reviews as required for NERC and Sarbanes Oxley compliance. The system is also used to validate NERC CIP prerequisites such as required training and background checks.</p> <p>The BadgePoint application was implemented in 2008. The original development and support of the system was completed by Security Management Consulting, whose company is no longer managing the system. Currently AEP is receiving minimal support through a third party vendor but no new development is permitted.</p> <p>With upcoming changes required to support multiple physical access control systems, and the need for change required by NERC CIP-006 and NERC CIP version 5, production enhancements are imminent. This project will replace BadgePoint with another physical access management application and prepare Physical Security to meet future compliance requirements.</p>
<p><b>Other Alternatives Considered:</b></p>	<p><u>No Action</u> - Although taking no action clearly results in low immediate costs, the lack of vendor support for BadgePoint will not allow us to meet regulatory and internal control requirements (NERC CIP version 5, CIP-006). Additionally, BadgePoint is unable to support two physical access control systems which will be in place in 2015 as we migrate from our existing system.</p> <p><u>Purchase Quantum Secure</u> - This solution is more costly and would require more configurations to meet AEP implementation requirements.</p> <p><u>Utilize MyAccess for Physical Access Management</u> - This option was explored to determine if our current provisioning system could be extended to manage physical access. Unfortunately the system would require extensive customization that would not allow AEP to easily upgrade the MyAccess system with future releases.</p>
<p><b>Conclusion:</b></p>	<p>In conclusion, AEP Physical Security has chosen to implement AlertEnterprises! Guardian as their new physical access management application. Their intent is to complete this project in 2014 to allow for use of a new physical access control system in the new data center scheduled for 2015.</p> <ul style="list-style-type: none"> <li>• Will allow AEP to meet NERC CIP-006, R2.2 guidelines       <ul style="list-style-type: none"> <li>o PAMS must reside on a separate server from PACS system</li> </ul> </li> <li>• Will allow AEP to meet NERC CIP version 5 changes       <ul style="list-style-type: none"> <li>o Require clear justification to show need for access</li> <li>o Annual access reviews</li> <li>o Access rights vs Authorization comparison</li> <li>o Access rights removal within 24 hours</li> </ul> </li> <li>• Will set AEP up for PACS replacement in 2015</li> <li>• High priority project</li> </ul>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITSSV1351 - Enterprise Documentum Custom Client Capability -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	EMC Documentum has been in use at AEP for a number of years and is the software platform for content and document management. This purchase of Documentum custom client user licenses will align AEP with actual usage and expand the Documentum platform to the enterprise. These new licenses will allow deployment of Documentum in new business areas such as Utilities, Transmission, Corporate and Shared Services. This purchase is for 19,127 custom client Documentum user licenses, an additional 3,127 platform licenses to bring our platform count up to 19,127 and 100 D2 client licenses. This project is a software license purchase.																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$1,700,000</td> <td>\$1,700,000</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$1,700,000</b></td> <td><b>\$1,700,000</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$1,700,000	\$1,700,000	<b>Total</b>		<b>\$0</b>	<b>\$1,700,000</b>	<b>\$1,700,000</b>																											
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Associated O&M	\$0	\$170,000	\$0	\$0	\$170,000																																							
<b>Project Dates:</b>	<b>Start Date :</b> 08/18/2014 <b>In Service Date :</b> 09/30/2014 <b>Completion Date:</b> 12/31/2014																																											
<b>Regulatory Cost Recovery:</b>	Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 08/16/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$1,700,000	\$0	\$0	\$1,700,000
	<b>Total</b>	<b>\$0</b>	<b>\$1,700,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,700,000</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Stanley J Bundy	08/07/2014
		Approved	Jeffrey P White	08/07/2014
		Approved	Dennis T Daugherty	08/08/2014
		Approved	Michael A Rozsa	08/08/2014
		Approved	Alberto G Ruocco	08/11/2014
		Approved	Randolph J Ware	08/12/2014
		Approved	Alesia A Austin	08/16/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	GRIMM,JOHN E
		Project Manager	GRIMM,JOHN E

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>AEP has been pursuing an Enterprise Content Management plan for several years and the foundation of this strategy has already been put into place as we have built an enterprise application platform. This strategy will provide the following benefits:</p> <ul style="list-style-type: none"> <li>Reduce risks and costs associated with litigation</li> <li>Reduce operating costs as employees can more effectively search and access information</li> <li>Information currently contained in silo operations becomes more accessible and visible (knowledge sharing)</li> <li>Provide for consistent approach to business processes and data governance</li> <li>Provide enterprise platform for automated workflow to improve and accelerate business processes and decision making</li> <li>Content managed from time of creation through active use to final archival and destruction</li> <li>Reduces physical file cabinets and shelves for hard copy documents</li> <li>Reduces boxes stored in physical record storage and associated storage cost</li> </ul>
<b>Other Alternatives Considered:</b>	<p>While there are other document management tools being used at AEP, EMC Documentum is AEP's Enterprise Content Management product of choice due to factors such as existing product penetration level, current technical expertise and staffing around the product, and business unit satisfaction and support. Only the vendor of Documentum, EMC, can offer AEP the licenses and support in one cost effective package that builds upon our existing license and support agreements, a sole source option.</p>
<b>Conclusion:</b>	<p>AEP will procure software licensing to enable new business units such as Transmission, Corporate and Shared Services to move to the AEP standard for document management, EMC Documentum. This purchase of Documentum custom client user licenses will align AEP with actual usage.</p>

Date September 12, 2013



Company American Electric Power Service Corporation		CI/LI/CPPI/Program Number ITTCM1275	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B SB 9/12/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received. Reviewed by CP&B SB 9/12/13
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	9/10/2013	
1	S. Bundy B. A. MacPherson	SB 9/12/2013	
	L. L. Dieck		
	C. Zebula B. X. Tierney		
	L. M. Barton		
	L.J. Weber M.C. McCullough		
	L. Hillebrand D. E. Welch R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 9/15/13	
		9/24/13 Sept 2013	Approved in PeopleSoft Month Included in Board Package

Scanned File Name: AEPSC ITTCM1275.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITTCM1275 Telecommunications Training Facility  
 6501 Mink Street, Pataskala, Ohio

**Description:** AEP Information Technology (IT) Telecommunications is seeking approval to build a common Training Facility at the current site of Transmission's Training Center (6501 Mink Street, Pataskala, Ohio). This will allow Telecom to leverage common training (i.e., Safety), and train on the many technology touch points between Transmission and Telecom. Telecom needs to establish a standards technology curriculum for all existing and future staff. This is directly aligned with the reliability and integrity of AEP's Telecommunications Network.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 1,756,323	\$ 1,756,323

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,281,000	\$ 475,323	\$ -	\$ 1,756,323
<b>Total to be Authorized</b>	\$ -	\$ 1,281,000	\$ 475,323	\$ -	\$ 1,756,323
<b>Net AEP Cash Flow</b>	\$ -	\$ 1,281,000	\$ 475,323	\$ -	\$ 1,756,323
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ 22,000	\$ 22,000	\$ 44,000

**Start Date:** 10/1/2013      **Completion Date:** 6/30/2014      **In Service Date:** 7/1/2014

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:**      **Included in IRC Presentation**       **Project Funded**       **Offset Source**

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco

**Approved On:** 9/10/2013

## Capital Improvement Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	1,756,323	-	1,756,323
<b>Total</b>	<b>\$ 1,756,323</b>	<b>\$ -</b>	<b>\$ 1,756,323</b>

### 2013 Direct Cost Funding

### Offset Source and Amount

In Forecast	\$ -	
Offset	\$ 1,281,000	<i>AEPSC ITCAPPROJ</i>

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See attached electronic signature	09/10/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		9/15/13

### Project Contacts

Contact	Name	Telephone
Project Manager	Julie Standley	614-716-1974
Requisition Detail Provider	Stan Bundy	614-716-3924



## Capital Improvement Approval Requisition

### Project Justification

IT Telecommunications is seeking approval to build a common training facility at the current site of Transmission's Training Center (6501 Mink St. Pataskala, Ohio). This will allow Telecom to leverage common training (i.e. safety), and train on the many technology touch points between Transmission and Telecom. Telecom needs to establish a standard technology curriculum for all existing and future staff. This is directly aligned with the reliability and integrity of AEP's Telecommunications Network.

IT Telecommunications Engineering and Operations installs and maintains 3,500 miles of fiber, over 500 communication towers, AEP's Local Area Network (LAN), Wide Area Network (WAN), and Supervisory Control and Data Acquisition (SCADA) networks. Additionally, they are responsible for leased lines and wireless communication, Internet Protocol (IP) Telephony, Video/Audio Conferencing, SCADA Station Data, Radio, gridSMART Advanced Metering Infrastructure Distribution Automation (AMI DA), Mobile Data Computers (MDC's), etc.

One third of IT Telecom's employees are retirement eligible, leading to additional staff augmentation and eventual new hires. AEP's Telecommunication technologies are numerous and complex and many are legacy technologies that won't be replaced for several years. It's imperative that we establish a training program to pass knowledge from experienced technicians and engineers to lower skilled employees, contractors, and new hires.

Additional needs that are expected to be met by this facility:

- Cross training. We no longer have the luxury to have employees specialized in specific disciplines. Engineers and technicians require training on a variety of equipment, and need to understand how they interrelate.
- Create an environment where we can safely train technicians on equipment residing in substations and other hazardous areas.
- Create a cyber-secure environment for vendor demonstrations and testing.
- Create a laboratory that provides the ability to recreate Network issues for root cause analysis and troubleshooting.
- Telecom has adopted the practice of internal mutual assist, by sending technicians across operating company boundaries to assist one another. This helps prevent hiring costly outside services on large projects. Having consistency in configuration and operation across all Telecom teams is essential to success. One standard set of training criteria will begin to align our teams around standards and practices.
- As an added benefit, this facility can act as the business continuity back-up Network Operations Center / Global Security Operations Center desk.

## Capital Improvement Approval Requisition

### Other Alternatives Considered

- Telecom considered and researched existing Telecom facilities for available space that could accommodate a training facility. The only space that may have met the requirements was turned over to Transmission in 2011 to save cost, and is no longer available to us.
- Telecom considered utilizing some of the space in the existing Transmission training facility, but there is not enough space for our equipment that requires environmentally controlled conditions. Nor was there space available for classroom exercises around said equipment.
- Consideration was given to adding on to the Transmission training facility, however surrounding space did not accommodate an addition without considerable disruption, and it was thought that the cost would not be any less than building a standalone facility.

### Conclusion

IT Telecommunications recommends approval to build a common Training Facility at the current site of the Transmission Training Center.

### Associated/Future Projects

None

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	100,000	-	100,000	100,000	-	100,000
Outside Services - Labor	-	-	-	-	-	-
Outside Services Software	-	-	-	-	-	-
Material	1,608,723	-	1,608,723	1,608,723	-	1,608,723
Other Cost Category	1,100	-	1,100	1,100	-	1,100
Fleet	-	-	-	-	-	-
Fringes/Incentives	46,500	-	46,500	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>1,756,323</b>	<b>-</b>	<b>1,756,323</b>	<b>1,709,823</b>	<b>-</b>	<b>1,709,823</b>

Date October 17, 2012



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITUOP1048	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B JLF 10-17-12	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B JLF 10-17-12

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	<i>DL 10/18/12</i>	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	B. D. Radous		
	S. Burge		
	L.J. Weber		
	M. C. McCullough		
	D. E. Welch		
	R. P. Powers		
	L. Barton		
	Buckeye Power Approval		
	N. K. Akins		
2	Jenifer Fischer - 28th floor Ext 3032		
		<i>10-23-12</i>	Approved in PeopleSoft
		<i>Oct-2012</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Cathy Warchal - 28th Floor - Ext 1347

Scanned File Name: AEPSC ITUOP1048.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITUOP1048 - Bentley Substation Design Tool Software  
 1 Riverside Plaza, Columbus, OH

**Description:** This commercial Smart-3D computer aided design (CAD) system is essential to the cost effective execution of our growing T&D station capital work-plan. It will be a competitive advantage for AEP in the post-ROFR (i.e., Right Of First Refusal) Transmission environment. This investment will result in the following benefits:

- ~ **\$2M direct O&M savings** over a 5-year period through reduction in existing software maintenance fees
- ~ **\$20M capital estimated productivity benefits** over a 5-year period from engineering and construction efficiency gains
- ~ **\$1.3M estimated O&M avoided costs** for a rewrite of the existing in-house developed software supporting our existing CAD system (software language is functionally obsolete and unsustainable)

Actual benefits will likely be greater than the conservative estimates above. Benefits not included in the above savings estimates include the following:

- Potential **benefits for Generation and Distribution** beyond station applications since this would be an enterprise license.
- This tool **increases capital work-plan execution capability** by significantly reducing construction outages, which is one of our main work-plan resource constraints today.
- This tool **significantly reduces project cycle time**, and allows us to execute projects much more quickly than with traditional methods, resulting in a competitive advantage in serving new industrial load or competing for new transmission projects.

The stated benefits have been proven as this tool has become mainstream over the years in the commercial building, highway, oil refinery, and nuclear industries. More recently, the utility industry has moved in this direction as companies like PG&E, Burns & McDonnell, and others have purchased the product, knowing that this is the future industry direction, and a competitive advantage for those on the front of this trend.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 7,596,284	\$ 7,596,284

Cash Flow:	Prior Years	2012	2013	Future Years	Total
<b>Capital</b>	\$ -	\$ 3,047,600	\$ 4,548,684	\$ -	\$ 7,596,284
<b>Removal</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ -	\$ 3,047,600	\$ 4,548,684	\$ -	\$ 7,596,284
<b>Associated O&amp;M</b>	\$ -	\$ 2,035	\$ 123,698	\$ -	\$ 125,733

**Start Date:** 10/1/2012      **Completion Date:** 3/31/2014      **In Service Date:** 12/31/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:**      2012 Control Budget (included in IRC Presentation)       Yes      Offset Source       N/A

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/S. Smith      **Approved On:** 9/12/2012

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	7,596,284	-	7,596,284
<b>Total</b>	<b>\$ 7,596,284</b>	<b>\$ -</b>	<b>\$ 7,596,284</b>


**2012 Direct Cost Budget Funding**

**Budget Offset Source and Amount**

In Budget	\$	3,001,100	<i>(If budget offset, provide Opco, BU, Project ID, \$'s)</i>
Budget Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See Electronic Approval Attached	9/12/2012
amt ≤ \$ 10m	SVP Transmission Strategy & Business Development	Scott Smith	See Electronic Approval Attached	9/10/2012
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		10/18/12

**Project Contacts**

Contact	Name	Telephone
Project Manager	Julie Slone	910-7474
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

The Bentley Substation Design software builds on the platform and processes established in the vision set forth with AEP's in-house developed applications of SE PORT, MS Tracker, SRAT, and Work Order Creation. These applications have proven the viability of the vision and provided improvements over CAD applications alone. Tying material data with components, assemblies, and standard drawings generated from within Transmission's Standards departments has delivered both consistency and speed. The Bentley Substation Design software augments this functionality in basic ways by additional enhancement of component intelligence, improved placement methods with a Promise-e electrical control system design for electrical connectivity. These elements combine to allow a faster design cycle with fewer errors, resulting in the following benefits:

- Approximately \$2M saved in Type 1 (i.e., direct / tangible) O&M savings over 5 years
- An estimated additional \$20M in Type 2 (i.e., Indirect / productivity) Capital savings over 5 years due to:
  - Engineering efficiency gains, assumed @ 12%
  - OEC (Outside Engineering Contractor) productivity savings, @ 12%, assuming a modest increase in OECs using the software over time
  - Construction labor productivity savings conservatively estimated @ 1%, due to higher quality design results, reducing errors
- Overall outage time is expected to be reduced, due to the efficiency and quality gains, thereby increasing our throughput
- An increase in our competitive advantage, due to high respect and efficiency in the industry
- Avoidance of an estimated rewrite of our existing software (written in an obsolete, and hard to support, software development language) of approximately \$1.3M, while not reaching some of the estimated productivity gains in efficiency included with the Bentley tool, and yet still requiring regular enhancements requiring additional time and capital dollars.

Strengths of the Bentley Substation Design software are:

- 1). Integrated project based application.
- 2). Fast schematic design.
- 3). Automatic cross referencing and wire numbering.
- 4). Real time error checking.
- 5). Physical component linkage to Protection & Control schematics and wiring diagrams.
- 6). Over 1 million major vendor symbols and parts.

The Bentley Substation Design software organizes and integrates the elements of a substation design into a comprehensive station design project. Simply by clicking on components within the design, the user is easily able to navigate from 3D to 2D design components physical to Protection & Control (P&C). Though the project and all associated designs, drawings, and documents are managed in the Bentley ProjectWise system, moving between the applications is as simple as selecting the component in the design, right clicking, and selecting the specific representation of the element. Each intelligent element in the design will also contain a record of all of the connections currently assigned and all of the connections available to the specific element.

Developed largely on the Bentley "power" platform, now the core behind many Bentley applications, the Bentley Substation Design software will provide a continuity of interface and basic functionality. This will allow the migration of our design staff to the Bentley Substation Design software with relative ease. Most of the Bentley MicroStation graphical user interface (GUI) is retained and available to the user while working in the software.

This suite of Bentley software will help position Transmission to streamline the design process on multiple fronts; from owner operator design build processes, workforce realignment, and continuity with outsource contractors. Though this software will be configured to work with other AEP applications and processes, it will be an off-the-shelf product provided from an industry leader in application development. Bentley has a long history with AEP and the utility industry.

## Capital Improvement Approval Requisition

### Other Alternatives Considered

#### Option 1 – No Action (aka – base case)

- o No improvement would be realized.
- o In the short term, this may seem a viable option, however risks are increased if the in-house applications would fail or become dysfunctional due to aging technologies and platforms where they have little benefit to the design community. Obsolescence of the application platform will require a programming effort in the future. A backlog of requested repairs and enhancements will not be accomplished. User confidence and adoption of the existing platform will be adversely impacted.
- o IT will not support the business direction for allowing external OEC's access similar to internal AEP design staff.
- o As new hardware and software are put into production, managing these obsolete applications will effectively become impossible.
- o Loss of competitive edge.
- o No additional software availability such as Dynamic Plot or AssetWise.
- o Annual O&M software maintenance fee to Bentley of \$420,000.

#### Option 2 – Re-platforming of the existing AEP in-house developed applications SE PORT, MS Tracker, SRAT, and Work Order Creation to a current platform compatible with our existing and planned operating environments

- o This option gives us ultimate control over the application's capability, use, and future direction.
- o The re-platforming effort will cost in excess of \$1.3M with some performance gain, but no additional functionality.
- o AEP would not benefit on market driven enhancements from collaborative development from an industry leading software supplier.
- o No additional software availability such as Dynamic Plot or Asset Wise.
- o Annual O&M software maintenance fee to Bentley of \$420,000.

## Capital Improvement Approval Requisition

### Other Alternatives Considered (Continued)

#### Option 3a – Conventional Bentley Substation License Purchase

- This option will allow the retirement of the AEP in-house developed applications SE PORT, MS Tracker, SRAT, and Work Order Creation. \$1.3M would be avoided rewriting or enhancing the legacy applications.
- 130 vendor software license purchase at \$1.7M for use by full time employees and contractor staff.
- Vendor professional services of \$986K and approximately \$173K AEP IT costs to implement.
- Internal labor of \$409K to implement.
- No ability to extend software licenses to tier 2 contractors.
- No additional software availability such as Dynamic Plot or AssetWise.
- Annual O&M software maintenance increase of \$380K.
- Functionality enhancements within the user interface will positively impact the day-to-day work of Transmission's design staff.
- New functionality would be introduced allowing the status of wiring between components to be validated within the database rather than relying totally upon the user. This function would have substantial positive impact upon the time required to check prints and error reduction.
- Bill of Material (BOM) information will be associated with components and assemblies and passed to Enterprise Asset Management (EAM). This functionality is similar to existing SE PORT and MS Tracker.
- Organization of components that are available for placement will be modified and improved to aid the user in locating the correct component or assembly.
- Evolutionary change in the architecture of the station model. Within the Bentley Substation Design software, lines and text are replaced with elements that are connected with a database. These are smart elements that know not only material requisition information, but what they are. An example would be a breaker. This single device when added to the station model would:
  - Know that it had a graphical component in the station One Line, station (physical) layout, and in a connection diagram.
  - Know how many connections it supports.
  - Know its voltage / current rating.
  - Know its clearance requirements.
  - Know its equipment identification number
- As these smart components are used within the model, additional information is developed and associated as the design process continues the device would:
  - Know if it has been placed within the station One Line, station layout, and connection diagram.
  - Know how many connections have been designated to it.
  - Know what cables and wires represent these connections.
  - Know what is connected to the other end of all connections.
- The user is able to rapidly navigate from any of these representations to the documents or parts of the model by selecting the component. A right click menu allows the user to select what view of the device within the model they would like to go to.
- The Bentley ProjectWise tool will maintain the model and all of the drawings representing the paper that will eventually be generated.



## Capital Improvement Approval Requisition

### Other Alternatives Considered (Continued)

#### Option 3b – Capitalized Bentley Substation License Purchase

- This option will allow the retirement of the AEP in-house developed applications SE PORT, MS Tracker, SRAT, and Work Order Creation. \$1.3M would be avoided rewriting or enhancing the legacy applications.
- Purchase 130 software licenses for 5 years to be used by AEP full time employees and contract staff at \$3.1M. This option has not been proposed to the vendor.
- Vendor professional services of \$986K and approximately \$173K AEP IT costs to implement.
- Internal labor of \$409K to implement.
- No ability to extend software licenses to tier 2 contractors.
- No additional software availability such as Dynamic Plot or AssetWise.
- Annual O&M software maintenance fee to Bentley of \$420,000.
- Functionality enhancements within the user interface will positively impact the day-to-day work of Transmission's design staff.
- New functionality would be introduced allowing the status of wiring between components to be validated within the database rather than relying totally upon the user. This function should have substantial positive impact upon the time required to check prints and error reduction.
- Bill of Material (BOM) information will be associated with components and assemblies and passed to Enterprise Asset Management (EAM). This functionality is similar to existing SE PORT and MS Tracker.
- Organization of components that are available for placement will be modified and improved to aid the user in locating the correct component or assembly.
- Evolutionary change in the architecture of the station model. Within the Bentley Substation Design software, lines and text are replaced with elements that are connected with a database. These are smart elements that know not only material requisition information, but what they are. An example could be a breaker. This single device when added to the station model would:
  - Know that it had a graphical component in the station One Line, station (physical) layout, and in a connection diagram.
  - Know how many connections it supports.
  - Know its voltage / current rating.
  - Know its clearance requirements.
  - Know its equipment identification number
- As these smart components are used within the model, additional information is developed and associated as the design process continues the device would:
  - Know if it has been placed within the station One Line, station layout, and connection diagram.
  - Know how many connections have been designated to it.
  - Know what cables and wires represent these connections.
  - Know what is connected to the other end of all connections.
- The user is able to rapidly navigate from any of these representations to the documents or parts of the model by selecting the component. A right click menu allows the user to select what view of the device within the model they would like to go to.
- The Bentley ProjectWise software will maintain the model and all of the drawings representing the paper that will eventually be generated.

## Capital Improvement Approval Requisition

### Other Alternatives Considered (Continued)

#### Option 4 – Recommended Option, Bentley Substation Implementation 5-Year Software License Purchase

The most cost effective way to acquire this new software, is to bundle all of our existing Bentley products into one Enterprise License agreement. The full suite of Bentley software (many of which are currently used across T, D and G) will be available to all of AEP.

- o Annual O&M software maintenance reduced to \$32K annually – a savings of approx. \$2M over 5 years.
- o This option will allow the retirement of the AEP in-house developed applications SE PORT, MS Tracker, SRAT, and Work Order Creation. \$1.3M would be avoided rewriting or enhancing the legacy applications.
- o Functional enhancements within the user interface will positively impact the day-to-day work of our design staff.
- o Software licenses can be extended to Tier 2 contractors.
- o New functionality is introduced allowing the status of wiring between components to be validated within the database rather than relying totally upon the user. This function should have substantial positive impact upon the time required to check prints and error reduction.
- o Bill of Material (BOM) information will be associated with components and assemblies and passed to Enterprise Asset Management (EAM). This functionality is similar to existing SE PORT and MS Tracker.
- o Organization of components that are available for placement will be modified and improved to aid the user in locating the correct component or assembly.
- o Evolutionary change in the architecture of the station model. Within the Bentley Substation Design software lines and text are replaced with elements that are connected with a database. These are smart elements that know not only material requisition information, but what they are. An example could be a breaker, this single device when added to the station model would:
  - o Know that it had a graphical component in the station One Line, station (physical) layout, and connection diagram.
  - o Know how many connections it supports.
  - o Know its voltage / current rating.
  - o Know its clearance requirements.
  - o Know its equipment identification number.
- o As these smart components are used within the model, additional information is developed and associated as the design process continues the device would:
  - o Know if it has been placed within the station One Line, station layout, and connection diagram.
  - o Know how many connections have been designated to it.
  - o Know what cables and wires represent these connections.
  - o Know what is connected to the other end of all connections.
- o The user is able to rapidly navigate from any of these representations to the documents or parts of the model by selecting the component. A right click menu then allows the user to select what view of the device within the model they would like to go to.
- o The Bentley ProjectWise software will maintain the model and all of the drawings representing the paper that will eventually be generated.
- o The majority of Bentley applications will be available to AEP without incurring additional software licenses and maintenance costs for 5 years. This unlimited access will afford us a unique opportunity to try out or implement Bentley applications such as Dynamic Plot.
- o Allows Transmission to implement the AssetWise application with no product cost; implementation services only from Bentley.

## Capital Improvement Approval Requisition

### Other Alternatives Considered

#### Option 5 – Evaluation of Other Products Available

- o Reviewed AutoCAD Electrical and Autodesk Inventor tools implemented by other utilities in the United States. These off-the-shelf products were highly customized by the utilities to do substation 3D design. AEP does not want to purchase a software tool(s) that needs extensive customization.

### Conclusion

The implementation of the Bentley Substation Design software (option 4 above) is the recommended Transmission solution. The Bentley Substation Design software is aligned with Transmission's strategy by advancing the design principals established with the legacy applications SE PORT and MS Tracker. Additionally, this software positions AEP to extend design tools and processes to our outside service providers. The Bentley Substation Design software retains much of the look and feel of Bentley's MicroStation software so it will be familiar already to Transmission's graphic technicians and designers. This familiarity should help with Transmission adaptation to the new software. The Bentley Substation Design software is designed to work with ProjectWise and can be configured and customized to communicate with EAM.

Additionally, if the Bentley Substation Design software and other AEP applications are structured to extend to our outside service providers, additional savings will be realized. Implementation of the Bentley Substation Design software augments the functionality currently available in our legacy applications:

- o Improving component placement for both 2D and 3D.
- o Organization of available components will be updated.
- o Point to point connection validation.
- o Automatic wiring.
- o BOM management and material requisition communication with EAM.
- o Application tracking of time per project at the user level and data collection allowing for more accurate capitalization of project cost.

The Bentley Substation Design software brings updated functionality directly to the user:

- o Builds on the user's familiarity with Bentley MicroStation and ProjectWise and the legacy applications.
- o A robust array of capabilities broader than our previous tools will challenge us to progress to new methods that we may have not had previously considered.
- o AEP will benefit from the development that Bentley does for the industry.
- o Standards will be easier to follow and harder to avoid resulting in improved workflow and design consistency.

Dan Recker, the Managing Director of Transmission Engineering, owns and approves the direct/tangible (i.e. Type 1) business benefits of executing this project as described in the separate business case presentation. These benefits amount to \$390K of O&M, per year, split among the different business units making use of the Bentley software today. In addition, this capital improvement projects performance improvements that are expected to increase the capital execution throughput.

### Associated/Future Projects

None at this time.

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	25,000	408,940	433,940	25,000	408,940	433,940
Outside Services - Labor	128,520	912,000	1,040,520	128,520	912,000	1,040,520
Outside Services Software	1,808,187	3,796,188	5,604,375	1,808,187	3,796,188	5,604,375
Material	-	-	-	-	-	-
Other Cost Category	155,446	155,446	310,892	155,446	155,446	310,892
Fleet	-	-	-	-	-	-
Cell Phone	275	4,499	4,774	275	4,499	4,774
Fringes/Incentives	11,625	190,158	201,783	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>2,129,053</b>	<b>5,467,231</b>	<b>7,596,284</b>	<b>2,117,428</b>	<b>5,277,073</b>	<b>7,394,501</b>

Date October 10, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITUOP1089	Version 2
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SG 10/10/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SG 10/10/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	9/16/2013	
	T. Kirkpatrick	9/16/2013	
1	S. Bundy	SG 10/10/2013	
	B. A. MacPherson		
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 10/10/13	
		10/23/13	Approved in PeopleSoft
		Oct 2013	Month Included in Board Package

Scanned File Name: AEPSC ITUOP1089 Version 2.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation Version 2

**Project :** ITUOP1089 Web Expand Start and Transfer Service Revision  
 1 Riverside Plaza, Columbus, OH

**Description:** This is an enhancement to the AEP Website to allow a customer to transfer their service from one site to another without having to call the CSC (Customer Solution Center). This will reduce the number of required calls to the CSC which will more than justify the project expense. Further, the development will improve the MACSS (Marketing, Accounting and Customer Services System) to Web data exchange using the new technology standards.

Today, AEP operating company websites have "open" and "close" account functions, but each is stand alone and does not transfer any of the customer information from one premise to the other. This has caused numerous customer complaints and dissatisfaction. A transfer or "Moving" option would allow not only deposits to transfer but would include other customer attributes such as their chosen bill presentment and payment options (eBill, Checkless Payment, etc.).

Forty-nine percent of online start service orders must be 'key entered' by a CSA (Customer Service Agent). Certain situations will still result in a premise being ineligible for the automated process.

**Reason for Revision:**

- The effort of work required two additional web developers above the original estimate. There was a delay in filling these positions and a longer ramp up time due to filling these positions with external (new to AEP) resources.
- The complex nature of the changes and number of systems required to be modified across the organization supported by IT and the Corporate Communications group impacted the level of effort. Providing our customers the ability to transfer their service required coordination and changes across six major systems (Web User Interface, MACSS, Virtual Agent, Shadow Services, File Transfer Protocol and Fiserv).
- Additional end-to-end testing was identified which added effort to coordinate testing with our third party providers systems to ensure complete account transfers through all payment channels.

<b>Authorization Amount:</b>		<b>Previously Approved Amount</b>	<b>This Submission</b>	<b>Total Amount to be Authorized</b>
		\$ 569,900	\$ 216,562	\$ 786,462

Cash Flow:	Prior Years	2013	2014	Future Years	Total
Capital	\$ 250,434	\$ 536,028	\$ -	\$ -	\$ 786,462
Removal	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total to be Authorized</b>	\$ 250,434	\$ 536,028	\$ -	\$ -	\$ 786,462
Associated O&M	\$ -	\$ -	\$ -	\$ -	\$ -

**Start Date:** 5/1/2012      **Completion Date:** 8/31/2013      **In Service Date:** 7/15/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:** Included in IRC Presentation  Project Funded  Offset Source   
*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/T. Kirkpatrick      **Approved On:** 9/16/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	569,900	-	569,900
This Submission	216,562	-	216,562
<b>Total</b>	<b>\$ 786,462</b>	<b>\$ -</b>	<b>\$ 786,462</b>

**2013 Direct Cost Budget Funding**

**Budget Offset Source and Amount**

In Budget	\$	-	
Budget Offset	\$	425,027	<i>ITCAPPROJ AEP Service Corp</i>

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	9/16/2013
amt ≤ \$ 3m	VP Cust Svcs, Mktg & Distribution Svcs	Tom Kirkpatrick	See electronic approval attached	9/16/2013
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		10/10/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Sally Haimbaugh	(614) 716-1456
Requisition Detail Provider	Stan Bundy	(614) 716-3924

## Capital Improvement Approval Requisition

### Project Justification

This is an enhancement to the AEP Website to allow a customer to transfer their service from one site to another without having to call the CSC (Customer Solution Center). This will reduce the number of required calls to the CSC which will more than justify the project expense. Further the development will improve the MACSS (Marketing, Accounting and Customer Services System) to Web data exchange using the new technology standards.

### Reason for Revision:

- The effort of work required two additional web developers above the original estimate. There was a delay in filling these positions and a longer ramp up time due to filling these positions with external (new to AEP) resources.
- The complex nature of the changes and number of systems required to be modified across the organization supported by IT and the Corporate Communications group impacted the level of effort. Providing our customers the ability to transfer their service required coordination and changes across six major systems (Web User Interface, MACSS, Virtual Agent, Shadow Services, File Transfer Protocol and Fiserv).
- Additional end-to-end testing was identified which added effort to coordinate testing with our third party providers systems to ensure complete account transfers through all payment channels.

### Other Alternatives Considered

The considered alternative is to not enable the business requested cost saving, customer service enhancement or to move forward with the modification of the custom developed, internal AEP applications that will enable this cost justifying, service improvement, upgraded technology solution.

### Conclusion

This is an important project to further enable our customer self-service abilities allowing customers to manage their accounts without the dependency on the CSC (Customer Solution Center) to perform basic account functions. We have web services for starting and stopping account services and now we will have the added ability to transfer an account to a new address through the web services. This is especially relevant during spring and fall peak transaction times. Completing these transactions without using the CSC will more than justify the development and greatly reduce AEP's ongoing operating costs, while improving customer satisfaction.

### Associated/Future Projects

None at this time.



## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	194,614	66,822	261,436	194,614	66,822	261,436
Outside Services - Labor	344,047	-	344,047	344,047	-	344,047
Outside Services Software	-	-	-	-	-	-
Material	-	-	-	-	-	-
Other Cost Category	193	195	388	193	195	388
Fleet	-	32	32	-	32	32
Fringes/Incentives	129,236	51,323	180,559	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>668,090</b>	<b>118,372</b>	<b>786,462</b>	<b>538,854</b>	<b>67,049</b>	<b>605,903</b>

Date September 12, 2013



Company American Electric Power Service Corporation	CI/LI/CPPI/Program Number ITUOP1161	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 9/12/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 9/12/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	9/4/2013	
	T. Kirkpatrick	9/4/2013	
1	S. Bundy	SB 9/12/2013	
	B. A. MacPherson		
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 9/14/13	
		9/24/13	Approved in PeopleSoft
		Sept 2013	Month Included in Board Package

Scanned File Name: AEPSC ITUOP1161.pdf

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITUOP1161 - Mobile Alerts  
 1 Riverside Plaza, Columbus, Ohio

**Description:** A critical piece of our Mobile Strategy is to offer proactive alerts to our customers. Electronic notifications - such as outage and credit/billing alerts – will meet our customers' needs and expectations leading to increased customer satisfaction. Proactive emails and text messages have become common place among many service providers, such as banks, airlines, etc.

This project provides the foundational infrastructure needed to (1) proactively communicate with our customers via text and email, (2) a customer preference center that allows our customers to opt-in via web or call center, and (3) two initial notifications: outage and billing alerts.

Enabling paperless billing was shown to provide long-term, high corporate value by McKinsey. One of the main hurdles to customer enrollment is the fear of forgetting to pay their bill. Proactive billing alerts would allow customers the comfort of a text or email message reminding them to pay their electronic bill.

Improving outage communications is a critical recommendation of the Storm Preparedness Strategy team. This project will enable customers to proactively receive notifications when there are outages in their area – including notification of multiple day events, confirmation of premise outage, status updates, and restoration.

**Authorization Amount:**

	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 2,709,759	\$ 2,709,759

**Cash Flow:**

	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ 79,200	\$ 1,017,685	\$ 1,612,874	\$ -	\$ 2,709,759
<b>Total to be Authorized</b>	\$ 79,200	\$ 1,017,685	\$ 1,612,874	\$ -	\$ 2,709,759
<b>Net AEP Cash Flow</b>	\$ 79,200	\$ 1,017,685	\$ 1,612,874	\$ -	\$ 2,709,759
<b>Associated O&amp;M</b>	\$ 12,966	\$ 18,000	\$ 189,412	\$ 252,262	\$ 472,640

**Start Date:**

6/1/2012

**Completion Date:**

12/31/2014

**In Service Date:**

12/1/2014

**Regulatory Cost Recovery:**

Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:**

Included in IRC Presentation

N/A

Project Funded

Yes

Offset Source

AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/T. Kirkpatrick

**Approved On:** 9/4/2013

## Capital Improvement Approval Requisition

Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	2,709,759	-	2,709,759
<b>Total</b>	<b>\$ 2,709,759</b>	<b>\$ -</b>	<b>\$ 2,709,759</b>

2013 Direct Cost Funding

Offset Source and Amount

In Forecast	\$ -	<i>ITCAPPROJ AEP Service Corp</i>
Offset	\$ 950,346	

Requested future year funds are included in the last official Forecast.

Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See attached electronic signature	09/04/13
amt ≤ \$ 3m	VP Cust Svcs, Mktg & Dist Svcs	Thomas Kirkpatrick	See electronic approval attached	09/04/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		9/14/13

Project Contacts

Contact	Name	Telephone
Project Manager	Sally Haimbaugh	614-716-1456
Requisition Detail Provider	Stan Bundy	614-716-3924

## Capital Improvement Approval Requisition

### Project Justification

A critical piece of our Mobile Strategy is offering proactive alerts to our customers. Electronic notifications - such as outage and credit/billing alerts – will meet our customer's needs and increase customer satisfaction. Proactive emails and text messages have become common place amongst many service providers, such as banks, airlines, etc. Our customers expect us to also offer these notifications, to keep them up to date on the status of their outage or account.

The functionality included in this project will lay the foundation for many future initiatives. For example, operating companies have shown great interest in increasing their customer engagement. With a Customer Preference Center and the ability to send email/text messages, their goal will be much easier to accomplish. It will also enable existing efforts to be made more cost effective. For example, today we are manually sending approximately 12M Energy Efficiency Newsletters a year. This project will automate the sending of these emails each month.

The ability to send Mobile Alerts is becoming more commonplace in the utility industry. Companies that already offer similar programs include:

- Entergy
- Kansas City Power & Light
- Arizona Public Service
- Portland General Electric
- Salt River Project
- South Central Power

This project delivers three foundational products and 12 alerts. The foundational components provide the infrastructure needed to expand customer communications beyond the outage and billing/credit alerts that are part of this project.

#### Foundational Infrastructure:

- Subscription Services – These subscription services become our Customer Preference Center which enables customers to opt into desired communication and channel. This Preference Center will be available on the customer websites for self-service and to our Call Center Agents to promote and enroll customers.
- Event Processor – This processor will integrate our backend systems (Marketing Accounting Customer Service System (MACSS), PowerOn Replica, etc.), subscriptions services, and communication vendor with business rule logic that triggers the customer-desired communication at the appropriate time using their preferred channel (email or text).
- Communications – The chosen Email and Text tools will be integrated into the infrastructure.

#### Proactive Alerts:

- Outage Alerts: Outages in Your Area, Your Power is Out, Estimated Restoration, Power Restored, and Major Storm Notice
- Billing/Credit Alerts: New Bill Issued, Due Date Approaching, Past Due Bill, Disconnect Notice, Payment Received, and Closed Account Alerts

### Other Alternatives Considered

Do nothing – This would involve no changes to process or systems to address these drivers. However, this would hinder achievement of the goals of the paperless billing initiative and do nothing to address a major component of AEP Storm preparedness objectives, offset call center costs or improve customer satisfaction.

### Conclusion

The recommendation is to implement a "Complex Event Processing" (CEP) engine for subscription and event handling, and partner with a communications provider to manage the interaction with the customer. This will require integration with our existing Customer Information System (CIS) and other operational, back-end systems, hosting of the CEP, and integration with the selected communications partner.

### Associated/Future Projects

E-Mail Correspondence

## Capital Improvement Approval Requisition

### Benefits

Outage and credit/billing alerts will allow us to better manage the ever increasing call volume, improve customer satisfaction and confidence, and avoid truck rolls on disconnect for non-payment. With the implementation of mobile alerts, we have the opportunity to meet these customer's needs through a lower cost channel: email and text alerts. Many of our customers already receive alerts from their other business partners and they expect us to offer these same services. They have come to rely on receiving various reminders and confirmations electronically from their bank, credit card provider, and various online retailers. Proactively communicating with our customers via email and text delivers an extremely low cost option to engage our customers.

- Email - \$0.0036
- SMS - \$0.02 (estimate)

Once implemented, Mobile Alerts will be available to all customers regardless of the type of phone they carry. Even if a customer uses a basic phone, they will receive the benefit of receiving alerts via text message. Customers with all types of smart phones will be able to receive alerts immediately via either text or email. This is advantageous when compared with a mobile app, which only caters to a specific type of smart phone. One app would need developed for phones with an iOS operating system, another for those with an Android operating system, etc.

### Projected Benefits

Year	Calls (\$000)	Processing (\$000)	Paperless (\$000)	Total Benefits (\$000)
1	\$ 123	\$ 23	\$ 126	\$ 272
2	\$ 247	\$ 24	\$ 275	\$ 546
3	\$ 308	\$ 26	\$ 447	\$ 782
4	\$ 370	\$ 28	\$ 641	\$ 1,039
5	\$ 432	\$ 30	\$ 856	\$ 1,318
Total	\$1,480	\$ 131	\$ 2,346	\$ 3,957
	Avoid Future	Offset Manual Effort	More Cust Adopt	

### Email and Text Messaging increase on-time payment

- 33% pay within 4 hours of a disconnect notice
- Registered customers pay within 5 minutes of billing notice

### Additional Benefits

- Creates the ability for AEP to send text messages
- Meets outage preparedness and communication requirements
- Enables paperless billing objectives
- 94% of text message are read in 5 minutes, responded to in 2015 minutes
- Improves customer service
- Compliant with Spam Act – unsubscribe rules, avoiding large fines
- Improves public opinion
- Meeting Public Utility Commission customer safety, conservation, improved service and security objectives

Date April 16, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITUOP1216	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B <i>SB 4/15/13</i>	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B <i>SB 4/15/13</i>
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ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	T. Kirkpatrick	4/11/2013	
	A. Ruocco	4/11/2013	
1	S. Bundy	<i>SB</i> 4/15/2013	
	B. A. MacPherson		
2	D. Lynch	<i>DL</i> 4/16/13	
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
3	Cathy Warchal - 28th floor Ext 1347		
		<i>4-24-13</i>	Approved in PeopleSoft
		<i>APR 2013</i>	Month Included in Board Package

Alternate CP&B Contacts:  
 Darryl Lynch- 28th Floor - Ext 1142

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## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITUOP1216 Outage Management Dashboard  
 1 Riverside Plaza, Columbus Ohio

**Description:** The Outage Management System Website (OMS Web) is an internal AEP Web application that provides current outage and restoration information to dispatching and non-dispatching groups to monitor and manage outage restoration activities. The OMS Web has become an essential tool to manage restoration activities by central and field resources.

The OMS Web must be replaced due to outdated technologies. These technologies prevent scalability which can result in poor performance and failure during major storm events. The most recent example of this was during the 6/26/12 Derecho storm affecting the East operating companies. During this event, the OMS Web became unusable for much of the event duration. In addition, the technologies employed by the existing OMS Web are not consistent with AEP IT standards. The outage management support team is recommending that the OMS Web be retired and replaced with newer, scalable technology.

After evaluating several options, including buying a vendor application vs upgrading the current application, it was determined that replacing the existing OMS Web application with updated .NET technology and an Oracle database was the most beneficial option with the least amount of risk.

This project will retire the OMS Web application and deliver the Outage Management Dashboard which will use current technology to keep it viable into the future and will be more robust to meet the demands of a major storm.

**Type 2: Benefits**

- A more reliable and scalable application that can handle the user loads during a major storm
- Timely escalation of high priority hazards to the appropriate line personnel thereby reducing risk of harm to public and legal liabilities

**Type 3: Benefits**

- Reduced IT support costs in a major storm
- Higher employee productivity due to a more reliable and better performing application
- Built on currently supported technology, therefore more IT resources available for support and enhancements
- Improved user satisfaction
  - Improved application speed and performance
  - More reliable application available for users during major storms

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 636,021	\$ 636,021

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ 23,717	\$ 612,304		\$ -	\$ 636,021
<b>Total to be Authorized</b>	\$ 23,717	\$ 612,304	\$ -	\$ -	\$ 636,021
<b>Net AEP Cash Flow</b>	\$ 23,717	\$ 612,304	\$ -	\$ -	\$ 636,021
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -

<b>Start Date:</b>	11/1/2012	<b>Completion Date:</b>	9/30/2013	<b>In Service Date:</b>	9/30/2013
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**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

<b>Funding:</b>	Included in IRC Presentation	<input type="checkbox"/> Yes	Project Funded	<input type="checkbox"/> Yes	Offset Source	<input type="checkbox"/> AEPSC
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*Requested future year funds are included in the last official Forecast.*

**Approved By:** Kirkpatrick/Ruocco

**Approved On:** 4/11/2013



## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	636,021	-	636,021
<b>Total</b>	<b>\$ 636,021</b>	<b>\$ -</b>	<b>\$ 636,021</b>


**2012 Direct Cost Budget Funding**

**Budget Offset Source and Amount**

In Budget	\$	519,903	<i>(If budget offset, provide Opco, BU, Project ID, \$'s)</i>
Budget Offset	\$	-	

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	4/11/2013
amt ≤ \$ 3m	VP Cust Svcs, Mktg & Dist Svcs	Thomas Kirkpatrick	See electronic approval attached	4/11/2013
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		4/16/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	David Kunce	614-716-4963
Requisition Detail Provider	Shome Thomas	614-716-1139

## Capital Improvement Approval Requisition

### Project Justification

#### 1) Background:

The Outage Management System (OMS) consists of over 15 applications and is used by dispatching and field personnel to manage service restoration within all six Distribution Dispatching Centers and throughout the entire AEP Service Territory.

One of the key applications that is part of the OMS is the Outage Management System Website (OMS Web). This requisition pertains to the OMS Web.

- The OMS Web is an internal AEP Web application that provides current outage and restoration information to dispatching and non-dispatching groups to monitor and manage outage restoration activities.
- It has become an essential tool to manage restoration activities by central and field resources.
- It was developed in classic Active Server Pages (ASP) with FoxPro as the backend database. The technology stack is not scalable and therefore creates performance issues during major storms.
- The OMS Web application needs to be retired and replaced with newer, scalable technology.

#### 2) Current Situation:

On June 29, 2012 a Derecho traveled 700 miles in 10 hours, impacting 10 states leaving more than 4.3 million customers without electric service across the storm path. The storm interrupted service to over 1.4 million customers in the AEP East service territory between 3:00 pm June 29 and 1:00 am June 30. The storm impacted multiple East companies and provided the most severe test to-date for the OMS.

- The OMS Web, which typically handles a volume of 100-200 users in a day, was hit with over 800 users during the storm.
- The OMS Web was unable to handle an event of this magnitude. Both the volume of data and the number of users requesting access overwhelmed the application for the duration of the event.

#### 3) Business Rationale:

An operational assessment of the OMS was conducted following the June 2012 storms. Recommended OMS performance improvements were developed and prioritized based on how quickly they could be implemented. This Capital Program Requisition covers recommendations that will provide operational benefits during upcoming storm seasons and significantly improve OMS performance in severe storm events.

One of the performance improvement areas identified pertains to the OMS Web:

#### Recommendation:

Retire the existing OMS Web application and build enhanced capabilities on a new platform.

- Enhance the OMS Web queries that retrieve data for display.
- Implement enhanced pagination of query results.
- Eliminate the FoxPro database and rebuild OMS Web in Oracle to alleviate server capacity scalability limitations.
- Replace the outdated ASP classic language with current .NET technology.

The project scope includes the retirement of the current Outage Management System Web and delivery of a new Outage Management Dashboard that will be completed in 2013.

## **Project Justification (continued)**

### **4) Benefits:**

Successful completion of the improvements identified in this requisition will improve OMS performance and allow for more efficient use of OMS by dispatching and field personnel to manage service restoration.

Updated technology allows for better support from a larger pool of resources. The application will be scalable to handle larger storm events / user loads and application data will be housed in AEP standard database technology. This will allow for optimized data retrieval and display capabilities and the potential for data mining.

These benefits will better serve our customers in the event of any large storm that may occur in the future.

## **Other Alternatives Considered**

- 1) **Do nothing:**
  - a) Without the recommended improvements, OMS performance will remain the same.
  - b) Not an option since the application will again be unstable under a major storm
- 2) **Limit the number of users accessing the OMS Web application.**
  - a) Decreased productivity during storm events due to limited user base. (No scalability)
  - b) Difficulty in eliminating registered personnel.
- 3) **Vendor Solution – Gneral Electric (GE) GridIQ**
  - a) Expensive - \$1.5M Capital & \$200K on-going O&M in Materials & Supplies
  - b) Met only 40% of AEP OMSWeb functionality.
  - c) Technically more complex
- 4) **New Platform Rewrite in ASP.Net & Oracle backend database <- Recommended Solution**
  - a) Scalable and more robust to meet the demands of a major storm. Up to 1500 concurrent users.
  - b) Much less expensive than the GE vendor solution.
  - c) Technically less complex.

## **Conclusion**

Approval is requested to pursue the OMS Web replacement presented in this requisition:

- (a) Operational benefits will be gained during upcoming storm seasons.
- (b) OMS Web performance will be improved in severe storm events.
- (c) OMS Web performance will be enhanced for smaller events.
- (d) There is no financial benefit in waiting to implement the recommended improvements.

## **Associated/Future Projects**

A scope review of the Integrated Distribution Operations Platform project will be required to ensure performance improvements completed now will exist in the upgraded version of PowerOn scheduled for implementation in 2014.

## Capital Improvement Approval Requisition

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	144,317	63,711	208,028	144,317	63,711	208,028
Outside Services - Labor	329,445	-	329,445	329,445	-	329,445
Outside Services Software	-	-	-	-	-	-
Material	-	-	-	-	-	-
Other Cost Category	1,505	684	2,189	1,505	684	2,189
Fleet	-	-	-	-	-	-
Fringes/Incentives	66,846	29,514	96,360	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>542,112</b>	<b>93,909</b>	<b>636,021</b>	<b>475,266</b>	<b>64,395</b>	<b>539,661</b>

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 3</b>																																										
<b>Project:</b>	ITUOP1217 - ISIS Suite Rewrite Replace - - Revision																																											
<b>Location:</b>	1 Riverside Plaza, Columbus Ohio 43215																																											
<b>Description:</b>	<p>The Transmission asset management application suite is comprised of three distinct applications (ISIS - Integrated Station Information System; PCIS - Protection Control Information System; and SIP - Station Inspection Program) designed to support station asset inventory, protection, configuration, maintenance, and inspection activities.</p> <p>The ISIS Suite demonstrates regulatory compliance for station maintenance and protection and control in accordance with regulatory agency directives, including EPA guidelines, PUC regulatory reporting, NERC reliability compliance reporting / audits, and FERC Rate Recovery for Transmission Owners.</p> <p>This project is to purchase and install IPS-ENERGY from Intelligent Process Solutions as a replacement for the ISIS Suite of software tools.</p> <ol style="list-style-type: none"> <li>1. Due to the current system inflexibility, IT spends nearly \$1M/year in upgrades.</li> <li>2. Current system does not support the business, exposing AEP to risks and increased O&amp;M including incorrect relay settings (a heavy contributor to the 2003 blackout), unacceptable compliance support, and productivity issues.</li> <li>3. Current system does not allow the connection of asset data to device readings and outages, reducing the ability to monitor system health.</li> <li>4. New system will allow both Transmission and Generation to use a single application (supporting the McKinsey study).</li> <li>5. Current system does not support Corporate Separation.</li> <li>6. Current system does not easily support PRC005-2 standard.</li> <li>7. The current system is developed on a platform no longer supported by Microsoft. AEP IT has made a system wide decision to remediate applications using this platform at the next opportunity</li> </ol> <p>The total Capital cost of all phases of this project is estimated to be \$8,799,326.</p>																																											
<b>Revision Reason:</b>	<p>Each month, after our Steering Committee meeting, we present the same Steering slides to the IPS Executive team (Scott Smith, Scott Moore, Alberto Ruocco, Bob Wagner and Tim Riordan as well as others from the business and IT).</p> <p>During that meeting (10/1/14), we reviewed the licensing options. Based on strong support from the Executive team, it was determined that the Enterprise Pricing option would be in the best interest of AEP. Based on the direction from the IPS Executive Team and support of the IPS Steering Committee, the IPS project team will move forward with putting an Enterprise License agreement in place with IPS.</p> <p>Also including funds for bar coding. TFS requests to implement bar coding of its larger equipment. If the bar codes aren't used, it will drastically reduce the efficiency of the Station Servicers. The bar codes will greatly increase the efficiency. Estimated productivity savings from implementing this solution are over \$250k/year.</p> <p>Cost is \$60K for barcode readers and \$140K for barcode labels.</p>																																											
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<b>Project Dates:</b>	<b>Start Date :</b> 06/01/2013 <b>In Service Date :</b> 12/31/2015 <b>Completion Date:</b> 12/31/2015																																											
<b>Regulatory Cost Recovery:</b>																																												
<b>Funding:</b>	<b>Included in IRC Presentation :</b> N/A (future year) <b>Project Funded :</b> Partial																																											
<b>Approved By :</b>	<b>Approved On :</b>																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2015</b>	<b>2016</b>	<b>Future Years</b>	<b>Total</b>						
	In Forecast \$	\$0	\$0	\$0	\$0	\$0						
	Offsets Required	\$1,342,481	\$3,814,775	\$3,307,632	\$0	\$8,464,888						
	<b>Total</b>	<b>\$1,342,481</b>	<b>\$3,814,775</b>	<b>\$3,307,632</b>	<b>\$0</b>	<b>\$8,464,888</b>						
<b>Required Signatures:</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;"><b>Status</b></td> <td style="width: 33%; text-align: center;"><b>Name</b></td> <td style="width: 33%; text-align: center;"><b>Date</b></td> </tr> </table>						<b>Status</b>	<b>Name</b>	<b>Date</b>			
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Project Manager	KOPYAR, TONY P											

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>The IPS-ENERGY solution will provide the following process improvements:</p> <ul style="list-style-type: none"> <li>• System and process flexibility will allow compliance modifications to be made in a timely and cost effective manner</li> <li>• Upload and access relay settings directly from the application, rather than attached settings files providing a direct comparison of settings.</li> <li>• Station equipment test results will be automatically uploaded from the field rather than typed in the office.</li> <li>• All inspection and maintenance processes will be completed within a single application utilizing user customized work templates.</li> <li>• Data feeds to the Transmission Outage Reporting (TOR) and load flow analysis (KREMLIN) applications are possible</li> </ul> <p>Transmission Compliance, Region Operations, and Protection and Control engineering will realize significant impacts to compliance updating, work planning, inspections, and time reporting. Station Engineering, Planning, and Operations will see a lesser impact to information accessibility and more online training opportunities.</p>
<b>Other Alternatives Considered:</b>	<p><b>Option 1 - Purchase a 3 Party Vendor Tool</b>          The following vendors and inhouse applications were reviewed in a Request for Proposal (RFP) solution evaluation: EnoServ, Bentley, Tarigma, Digital Inspections, Intelligent Process Solutions (IPS), Ventyx, and the ISIS suite legacy applications. Purchasing a vendor application eliminates the need for internal IT to support and enhance the code. A vendor application allows the user community to configure the application to meet their needs and quickly react to compliance changes in the industry. Enhancements to vendor applications are provided to AEP at no cost for the duration of the vendor contract based on production release schedules published by the vendor.</p> <p><b>Option 2 - Internal IT Rewrite</b>          An internal IT rewrite of the ISIS suite of applications would require significant time from the business unit community and IT to write requirements and develop and test the application(s). A significant capital cost would be needed for this option. IT's ability to react quickly and enhance the application(s) to keep up with ever-changing regulatory compliance remains limited.</p> <p><b>Option 3 - Internal / External IT Code Conversion with Enhancements</b>          While converting the current ISIS suite of applications from VB6.0 to an IT standard and supported technology would get the applications on a supported platform, this solution would not address the usability issues with the application. More importantly, the users would gain minimal enhancements to the current functionality and no ability to configure the application themselves. An internal code conversion would require significant time from the business unit community to test the application. IT's ability to react quickly and enhance the application(s) to keep up with ever-changing regulatory compliance remains limited.</p>
<b>Conclusion:</b>	<p>The implementation of the IPS-ENERGY software (Option 1 above) is the recommended Transmission solution. The business unit and IT evaluation team overwhelming chose the IPS-ENERGY software as their tool of choice based on the functionality the software provides.</p>

Date September 12, 2013



Company American Electric Power Service Corporation	CI/LI/CP/Program Number ITUOP1269	Version 1
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Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate	Reviewed by CP&B SB 9/12/13	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received.	Reviewed by CP&B SB 9/12/13

ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	A. Ruocco	9/4/2013	
	T. Kirkpatrick	9/3/2013	
1	S. Bundy	SB 9/12/2013	
	B. A. MacPherson		
	L. L. Dieck		
	C. Zebula		
	B. X. Tierney		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	L. Hillebrand		
	D. E. Welch		
	R. P. Powers		
	Buckeye Power Approval		
	N. K. Akins		
2	Darryl Lynch- 28th Floor Ext 1142	DL 9/12/13	
		9/24/13	Approved in PeopleSoft
		Sept 2013	Month Included in Board Package

Scanned File Name: AEPSC ITUOP1269.pdf



## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation Version 1

**Project :** ITUOP1269 LD-Pro Migration to Distribution Design Studio  
 1 Riverside Plaza, Columbus, Ohio

**Description:** Itron's LD-Pro software is used by 500+ distribution engineers, technologists and technicians to provide designs for distribution infrastructure directly serving customers. LD-Pro has been in use by AEP since 1996, is built on older outdated technologies, and will be out of software support by Itron in the third quarter of 2013. In 2012 LD-Pro was used to create approximately 5700 designs per month and a total of \$638,000,000 of distribution designs for all of 2012.

Itron's Distribution Design Studio (DDS) is the proposed replacement for LD-Pro. The resulting solution provides a robust design solution and an automated interface to Electric Office for AEP's 40+ Geographic Information Systems (GIS) technicians. DDS merges LD-Pro and the associated Global Positioning System (GPS) surveying data collection tool. The new software supports the need for more timely as-designed data for distribution managements systems including Gen-E and PowerOn. In addition, in order to accommodate AEP's desire to harden the distribution system design, DDS will provide a versatile platform that will allow the distribution system hardening designs to be created consistently. The improvements made in DDS over LD-Pro allow the distribution engineers the ability to optimize designs and conform to the National Electrical Safety Code along with an easier to use product. The integrated interface also allows engineers focus on the design process and quality of designs. The initial project planning will begin in the fall of 2013 with initial system deployment to AEP Ohio scheduled for mid-2014. Final deployment will be completed in mid-2015.

**Benefits**

- Type 2: Improved productivity of GIS technicians posting line configuration changes.  
 Reduced reliance on vendor support for new electric design templates.
- Type 3: A more reliable and supported application due to warranty of known vendor.  
 Reduced interface support costs due to a more integrated interface with Electric Office.  
 Improved productivity and design quality through the use of the new DDS modules.  
 Upgrade of existing vendor product with reliable track record therefore more stable than a new product.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 1,942,443	\$ 1,942,443

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,337,916	\$ 604,527	\$ -	\$ 1,942,443
<b>Total to be Authorized</b>	\$ -	\$ 1,337,916	\$ 604,527	\$ -	\$ 1,942,443
<b>Net AEP Cash Flow</b>	\$ -	\$ 1,337,916	\$ 604,527	\$ -	\$ 1,942,443
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ 332,240	\$ 1,527,307	\$ 1,859,547

**Start Date:** 9/1/2013      **Completion Date:** 7/31/2015      **In Service Date:** 5/31/2014

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.

**Funding:** Included in IRC Presentation  N/A  Project Funded  Yes  Offset Source  AEPSC

*Requested future year funds are included in the last official Forecast.*

**Approved By:** A. Ruocco/T. Kirkpatrick

**Approved On:** 9/4/2013

## Capital Improvement Approval Requisition

**Expenditure to be Authorized (fully loaded)**

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	1,942,443	-	1,942,443
<b>Total</b>	<b>\$ 1,942,443</b>	<b>\$ -</b>	<b>\$ 1,942,443</b>

**2013 Direct Cost Funding**

**Offset Source and Amount**

In Forecast	\$ -	
Offset	\$ 1,277,079	<i>ITCAPPROJ AEP Service Corp</i>

Requested future year funds are included in the last official Forecast.

**Required Signatures**

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	09/04/13
amt ≤ \$ 3m	VP Cust Svcs, Mktg & Dist Svcs	Tom Kirkpatrick	See electronic approval attached	09/03/13
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		9/12/13

**Project Contacts**

Contact	Name	Telephone
Project Manager	Shome Thomas	200-1139
Requisition Detail Provider	Stan Bundy	200-3924

## Project Justification

Itron's LD-Pro software is used by 500+ distribution engineers, technologists and technicians to provide designs for distribution infrastructure directly serving customers. LD-Pro has been in use by AEP since 1996, is built on older outdated technologies, and will be out of software support by Itron in the third quarter of 2013. In 2012 LD-Pro was used to create approximately 5700 designs per month and a total of \$638,000,000 of distribution designs for all of 2012.

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## Other Alternatives Considered

- Option 1 – Upgrade LD-Pro to Distribution Design Studio.
  - Phase 1 implementation project of DDS in Columbus from March 2014 to October 2014.
  - Full implementation roll out completed by July 2015.
  - Interfaces for DDS to DWMS STORMS, Smallworld Electric Office, the subdivision data interface for Customer Solutions Centers, and the Texas Rental can be based on existing interface architecture.
  - Capital cost of implementation is \$1.9 M
  - O&M cost of implementation is \$1.3 M; which consists primarily of training employees on use of the new system.
- Option 2 – Replace LD-Pro with another engineering design software package.
  - Based on a comprehensive review of candidate software packages, the second most viable software tool to replace LD-Pro is AutoDesk's Utility Design software.
  - The cost to implement the AutoDesk solution is in the range of \$7.4million to \$9.2million. This estimate does not include training cost of approximately \$1million.
- Option 3 – No Action
  - Continue to use LD-Pro until and past it's out of support date in the third quarter of 2013.
  - LD-Pro is a very manual package requiring many individual steps to create a design.
  - Pay for software support as needed at a rate of \$180/hr which is much greater than the rate for supported software. Average yearly maintenance support is \$150,000.
  - Increases costs to vendor for new templates required.
  - Continue to use a tool which is not storm hardened.

## Capital Improvement Approval Requisition

### Conclusion

Option 1, to replace LD-Pro with Distribution Design Studio is the appropriate choice. The ability to produce quality designs is more complex in the current software. The project will be completed by mid-2015. A Phase 1 implementation project is planned to establish a group within the Columbus district major projects and customer design groups starting March 2014. The Phase 1 implementation will be completed by October 2014. Users in Columbus district will continue to use the DDS software throughout the Phase 1 implementation until AEP wide production version is completed in mid-2015. Phase 1 of the project is the implementation for the Columbus user groups.

In 2014 the remaining data configuration, the final production interfaces to the Distribution Work Management System (DWMS), the interface to upgraded Smallworld, and the Texas Rental interface will be completed. Itron will provide a configuration testing session with users in each operating company. Training and migration from LD-Pro to DDS of the remaining users across AEP will begin March 2015. The rest of the capital dollars will be in 2014 to complete production environment development for all AEP areas and complete system wide user training. The system wide training will continue and complete from LD-Pro to DDS by July 2015.

### Associated/Future Projects

None

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	182,110	29,950	212,060	182,110	29,950	212,060
Outside Services - Labor	122,602	914,182	1,036,784	122,602	914,182	1,036,784
Outside Services Software	-	542,465	542,465	-	542,465	542,465
Material	-	-	-	-	-	-
Other Cost Category	52,195	330	52,525	52,195	330	52,525
Fleet	-	-	-	-	-	-
Fringes/Incentives	84,682	13,927	98,609	-	-	-
AFUDC	-	-	-	-	-	-
<b>Total Capital Costs</b>	<b>441,589</b>	<b>1,500,854</b>	<b>1,942,443</b>	<b>356,907</b>	<b>1,486,927</b>	<b>1,843,834</b>

IT WORK REQUEST



**American Electric Power  
 IT Work Request  
 KPCO Asset Transfer Case  
 120309**

**Purpose:** Complete this form to initiate all capital work requests through the IT organization.  
**Contact:** Business System Analyst (BSA) assigned to the requesting business unit.

**NOTE:** View comments to see directions on how to remove tips.

**Revision History**

Date	Version	Description	Author
7/31/13	1.0	Initial Draft	Tara Thomas
8/19/13	1.1	Updated Proration for equations	Tara Thomas
10/12/13	2.0	Remove Base Rate Case Information Update Functionality Requested Asset Transfer Case Approved Base Rate Case is withdrawn	Tara Thomas
10/15/13	2.1	Updated Equation Codes, Tariff Condition Codes, Renumbered functionality request	Tara Thomas
10/22/13	2.2	Changed functionality to reflect 2 riders instead of 3 riders per Regulatory.	Tara Thomas
10/24/13	2.2	Changed Functionality Section to separate IT requirements and Test only requirements	Tara Thomas
11/4/13	2.2	Update calculations for Rider equations	Tara Thomas
11/18/13	2.3	Updated Secton 2.1 per PM	Tara Thomas

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2 Functionality Requested .....	5
3 Application Considerations .....	8
4 Reporting Considerations .....	11
5 Training Considerations .....	12
6 Other Considerations (Optional).....	12

## 1 Work Request Background

- Service Now Asset ID (if enhancing existing application asset): 100510
- Subject Matter Experts (Individuals who can provide detailed requirements): Amy Elliot, Tara Thomas, Dale Patterson, Lila Munsey.

### 1.1 Problem/Opportunity Statement

On July 2, 2013 KPCO provided notice of its filing for the Stipulation and Settlement Agreement. On December 31, 2013, fifty percent of Mitchell Units 1 and 2 are to be transferred to Kentucky Power Company. On October 7, 2013 an order was issued for the Stipulation and Settlement agreement. The 2013 base rate case that was filed will be withdrawn.

The Stipulation and Settlement Agreement will include three new riders however the Asset Transfer Rider-2 will not be implemented until a later date. The three new riders include:

- Asset Transfer Rider (A.T.R.)
- Asset Transfer Rider-2 (A.T.R.-2)
- Purchase Power Adjustment (P.P.A.)

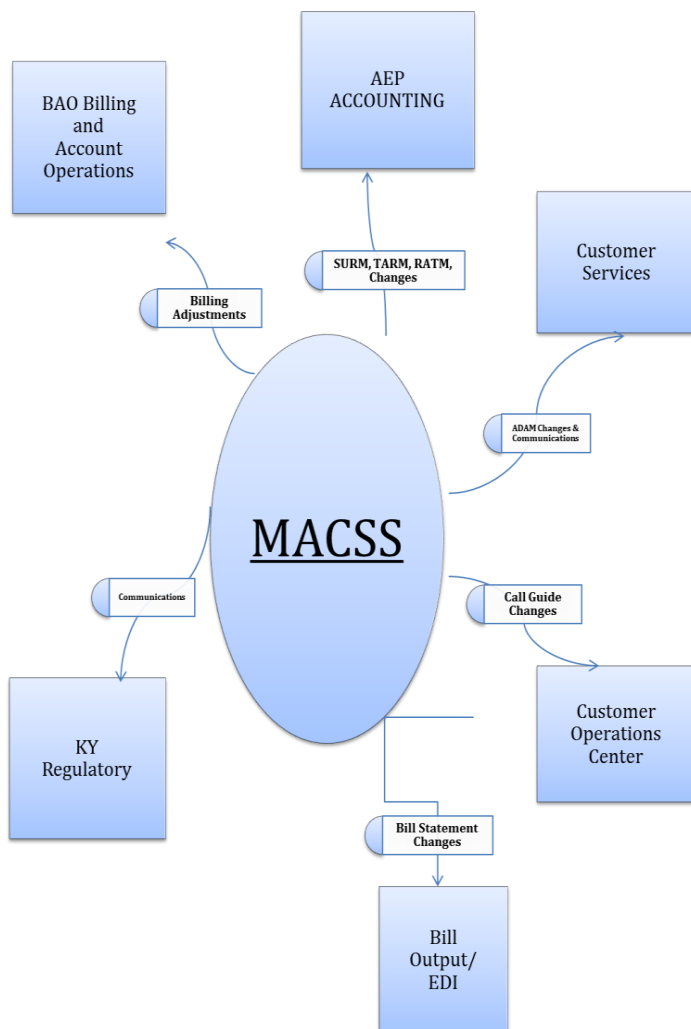
Currently MACSS is not programmed to handle the proposed new riders. Implementation is expected to occur on Cycle 1 January, December 31, 2013.

1.1.1 Define the existing business processes that are impacted and any current application usage (if applicable).

- MACSS Billing
- MACSS Bill Output/EDI
- Accounting Tariff/Revenue entries
- Revenue Reporting

1.1.2 Identify the operating companies, organizations, business units and interfacing systems that are or potentially could be impacted by this change (Ensure a context level dataflow diagram is created).

- MACSS
- AEP Accounting
- Kentucky Power
- Customer Services & Marketing
- Customer Operations Center (COC)-Virtual Agent
- Billing and Account Operations (BAO)
- Adam



- **Benefiting Location** – [link to the benefiting location value's entry in the Lotus Notes Chartfields Database] Kentucky Power
- **Attribution Basis** – ([see Attribution Basis Definitions](#))
  - **Rationale:**
- **Project Costing Business Unit (PCBU)** SHSVC
- **Billable Business Unit (BBU)** Kentucky Power



1.1.3 Are you considering bringing in any outside technologies (i.e. software packages) as part of this solution? If you are, identify any application(s) and business partners already determined.

No new technologies will be used in this solution.

1.1.4 Identify any known risks of not implementing the change.

If no action is taken, Kentucky Power will not be able to implement proposed changes for the Asset Transfer Case.

1.1.5 How long is this solution projected to be in use? Is this considered a temporary solution to the problem or will a longer-term solution be pursued?

This is considered a permanent solution.

## **2 Functionality Requested**

### **IT Requirements**

## A. MACSS

**2.1. Add two (2) new riders Asset Transfer Rider (A.T.R.), and Purchase Power Adjustment (P.P.A.). The Asset Transfer Rider-2 (A.T.R.-2) will not be implemented with this project and will not be implemented until new base rates are set by the Commission at a later time frame yet to be determined.**

2.1.1. Asset Transfer Rider (A.T.R.) and Purchase Power Adjustment (P.P.A.) will be prorated for service rendered on and after January 1, 2014. The Asset Transfer Rider-2 (A.T.R.-2) will replace the Asset Transfer Rider (A.T.R.) when new base rates are set for the Company.

2.1.2. Parameters of Equation: The Asset Transfer Rider (A.T.R.) will be billed:

- Residential Tariff (SA09A) - percent (%) is applied to total revenues before the environmental surcharge and PPA are applied.
- All other tariff classes (SA09B) - percent (%) applied to nonfuel revenues only before the environmental surcharge and PPA are applied to total revenues included fuel.
- Purchase Power Adjustment (P.P.A.) – percent (%) of base revenues which includes the ATR. This rider is calculated the same as the Environmental Surcharge (SW01A)

2.1.3. Both (2) riders will be applicable to the following tariffs: R.S (012, 013, 014, 015, 017, 022); R.S.-L.M.(028, 030, 032,034) ; T.O.D. (028, 030, 032,034) ; R.S.-T.O.D (036); Experimental R.S.-T.O.D.2 (027); S.G.S (211, 212, 225) ., Experimental S.G.S.-T.O.D (227); M.G.S.,(215, 216, 217, 218, 220, 236) M.G.S.-T.O.D.,(229) L.G.S.,(240, 242, 244, 246, 248, 250); L.G.S.-T.O.D.( 256, 257, 258, 259); Q.P.,(356, 258, 359, 360) C.I.P.-T.O.D( 370, 371, 372); C.S.-I.R.P (321); M.W (540); O.L.(094, 113, 097, 103, 098, 111, 122, 121, 120, 126, 099, 107, 109, 110, 116, 131, 130, 136) and S.L.(528).

2.1.4 New Equations – Define three (3) new equations: Asset Transfer Rider (A.T.R.)

two (2) equations: **SA09A** residential **SA09B** all other revenue classes.  
Purchase Power Adjustment (P.P.A.) one (1) equation: **SK04A** - all applicable tariffs.

## 2.2 Bill Output

- 2.2.1 Bill Presentation: A new line item shall display on bill output for the Asset Transfer Rider (A.T.R.) and Purchase Power Adjustment (P.P.A.) The line item shall display as, "Asset Transfer Rider" and "Purchase Power Adj" (per approval of the PSC) on the bill statement. (Placement of the line items has not yet been determined).
- 2.2.2 The application will pass the Asset Transfer Rider/Purchase Power Adjustment Riders as a new rider amounts through EDI. Carolyn Martin will be notified of this rider and execute EDI testing.
- 2.2.3 Proration: The rates will be prorated for the two riders, rates will be prorated for service rendered on and after January 1, 2014.

## 2.3 MACSS Processing

### Business Unit Considerations-Testing Only

- 2.3.1 Environmental Surcharge Factor (Tariff E.S.) SW01A will be fixed and maintained at 0.00% until new base rates are set by the Commission.
- 2.3.2 System Sales Adjustment Factor (Tariff S.S.C.-SS01) will set and maintained to 0.0000 cents /kWh until new base rates are set by the Commission.
- 2.3.3 The Cancel, Adjust, Re-bill (CARR) transaction shall re-bill accounts correctly according to when the riders are effective/expired.
- 2.3.4 The structure of the consolidated bill register, bill history reports, and bill register report will be maintained 'as is'.
- 2.3.5 The equations designed for the Asset Transfer Rider (A.T.R.) and Purchase Power Adjustment (P.P.A.) will roll-up into the total bill amount on the aforementioned registers and reports.
- 2.3.6 The new riders' equations will be included in the MANB process.
- 2.3.7 The new riders' equations will be included in the MACSS online bill calculation (BCAL) process.

## 2.4 Reports

2.4.1 Revenue Surcharge reporting will need to verify reports that will reflect the new Asset Transfer Rider (A.T.R.) and Purchase Power Adjustment (P.P.A.) for all tariff/customer classes applicable.

**B. Virtual Agent**

2.4.2 The call guide will require an update to include basic information about the Asset Transfer Rider (A.T.R.) and Purchase Power Adjustment (P.P.A.).

**C. Rate Comparison Analysis application (ADAM)**

2.1.5. No ADAM impact the ADAM application will accurately calculate the new riders based upon a rate of % of total bill.

**3 Application Considerations**

**3.1 Will the application be available to internal, external or both users?**

The application will be used by internal users only.

**3.2 How many people will be using this application (or feature) or if it is an existing application will there be any changes to the expected quantity of users? Will it be simultaneous usage?**

This feature will be used by existing users who already have access to the system, therefore, no changes to the expected quantity of users.

**3.3 Do you anticipate converting historical data or maintaining existing in an 'as is' condition?**

Current data will be maintained. Capture additional data going forward.

**3.4 Does this application impact any regulatory requirements? If yes, please put a "Y" in the appropriate box(es).**

	SOX Sarbanes Oxley
	PII Personally Identifiable Information <a href="http://security/PII/default.htm">http://security/PII/default.htm</a>
	CoC Code of Conduct <a href="http://ethics/Principles/default.htm">http://ethics/Principles/default.htm</a>
	NERC CIP North American Electronic Reliability Corporation / Critical Infrastructure Protection <a href="http://security/policies/NERCCIP.htm">http://security/policies/NERCCIP.htm</a>

	HIPAA Health Insurance Portability and Accountability Act
--	---

**3.5 If SOX, PII, or CoC was selected in section 3.4, contact IT Audits to determine level of Auditing engagement required.**

- IT Audits Contact:
- Date Engaged:

**3.6 Are there specific audit or archiving impacts; such as logging, monitoring, or archiving?**

There is no specific audit or archiving impacts with this proposed solution.

**3.7 What are your expectations for performance (i.e. response time) for new or existing features?**

The current Service Level agreements of 95% for MACSS are sufficient.

**3.8 What are the desired hours of availability of this application?**

This shall comply with the current service level agreement, 24/7.

**3.9 Is there a documented data management policy, which covers the data contained in this effort? (For applicable policies, check the [Storage Optimization Policy Central](#) site) Will the data be hosted internally or externally?**

**3.10 Data Management**

3.10.1 If there is a policy, use the policy to ensure the appropriate data management considerations are taken into account for this work request. If there is not a policy, work with the Propose phase architect to complete the first iteration of the [Data Management Decision Guide](#) for what is known about the solution approach during the Propose phase. Retain the Propose phase iteration of the guide in the project documentation folder for revising during Plan phase.

There is no documented data management policy in Storage Optimization Policy Central for the data contained in the application this effort affects. This effort is an enhancement to an existing application and this effort does not contain new data requirements.

3.10.2 Do you anticipate a disaster recovery solution for this new application or a disaster recovery change to an existing application? If the application exists, is it a Tier 0, Tier 1, Tier 2, Tier 2.5, or Tier 3 ([DR Tier Definitions](#))? Who is the data owner?

This functionality should be incorporated into the existing DR solution for MACSS.

**3.11 What is the Information Classification label? (Consult with the assigned IT architect for this proposal or IT Security Engineering if you need help) (<http://security/pdfs/InformationClassificationStandard.pdf> )**

	AEP Public
<b>X</b>	AEP Confidential
	AEP Confidential Special Handling

**3.12 Tell us what is known about the planned solution:**

3.12.1 What type of application is this (Insert an "X" next to all that apply)?

	Client/Server
	Web - intranet
	Web - Internet
<b>X</b>	Mainframe
	Mobile Device
	Other (please specify)

3.12.2 If known, please describe planned type and versions for:

- **Technology Platform: Mainframe**
- **Operating System: DB2**
- **Database (s): DB2**

3.12.3 If known, please describe the planned authentication and access controls to be implemented:

**3.13 IT Enterprise Integration,**

3.13.1 Will this application? (Indicate with an "X" next to the one that applies)

	Create a new exchange of files or messages between two or more applications or systems?
	Add, change, or replace an existing file or message exchange between applications or systems?

3.13.2 If you answered "Y" to either question in section 3.13, list the contact name and date that you discussed this request with IT Enterprise Integration.

- IT Enterprise Integration Contact:
- Date Engaged:

**3.14 Are there special support needs for this new enhanced application? If so, what is the business driver behind this need?**

There are no additional support needs required for the proposed solution.

**3.15 If you answer yes to any of the following bulleted items, list the contact name and date that you discussed this request with IT Security Engineering ([Sec Eng](#)). (This is critical to ensure AEP's Enterprise Security Standards are reviewed and the proposed initiative builds in compliance to these standards.)**

	Does the system/application introduce new technology or make major changes to current technology or security design?
	Will the project require access to employee, customer or prospective customer information?
	Will the project result in external customer contact?
	Will the project involve a third-party hosting arrangement?
	Does this application impact any of the regulatory requirements or have privacy concerns?
	Does the project have a web presence that is being added or modified?

- IT Security Engineering Contact:
- Date Engaged:

**3.16 Do you anticipate using a project management methodology other than waterfall or iterative waterfall? If so, specify the methodology.**

## 4 Reporting Considerations



NOTE: An IT BSA will assist you in completing this section.

**4.1 Does the solution require the creation or modification of reports?**

This solution will not require the creation or modification of reports.

**4.2 Who will be the primary creators/modifiers of the reports – the end users or IT?**

**4.3 Will you need to be able to combine the data from this solution with data from other systems/sources to create reports or conduct analyses? Similarly, if data from other systems is needed, do you need historical information from them?**

This solution will not require combining data with data from other systems.

**4.4 Will you need to create ad hoc queries in addition to structured reports?**

This solution will not require combining data with data from other systems.

## **5 Training Considerations**

**5.1 Are there special training needs or user documentation that should be considered? If so, please indicate size of audience and the type of training or documentation desired.**

MACSS and Virtual Agent users will be provided with documentation of the new proposed riders and charges through the MACSS User Release Notes.

## **6 Other Considerations (Optional)**

### **Stipulation and Settlement Agreement EXHIBITS:**

1. Effective January 1, 2014, the Company will implement an Asset Transfer Rider pursuant to the Tariff Asset Transfer Rider attached hereto as EXHIBIT 1.
2. After new base rates are established, the Asset Transfer Rider will be reset to remove the \$44 million by substituting Asset Transfer Rider-2 (Tariff A.T.R. -2), attached hereto as EXHIBIT 1-A.
3. Effective January 1, 2014, the monthly Environmental Surcharge factor (Tariff E.S.) will be fixed and maintained at 0.00% until new base rates are set by the Commission. The revised Tariff E.S. is attached hereto as EXHIBIT 2.
4. Effective January 1, 2014, the Company will set and maintain the System Sales Adjustment Factor (Tariff S.S.C.) to 0.0000 mills/kWh until new base rates are set by the Commission. The revised Tariff S.S.C. is attached hereto as EXHIBIT 3.
5. Purchase Power Adjustment attached hereto as EXHIBIT 5.



KENTUCKY POWER COMPANY

P.S.C. KY. NO. 10 ORIGINAL SHEET NO. 36-1  
 CANCELING P.S.C. KY. NO. 10 SHEET NO. 36-1

EXHIBIT 1

**TARIFF A.T.R.**  
 (Asset Transfer Rider)

**APPLICABLE.**

To Tariffs R.S., R.S.-L.M.-T.O.D., R.S.-T.O.D., Experimental R.S.-T.O.D.2, S.G.S., Experimental S.G.S.-T.O.D., M.G.S., M.G.S.-T.O.D., L.G.S., L.G.S.-T.O.D., Q.P., C.I.P.-T.O.D., C.S.-I.R.P., M.W., O.L. and S.L.

**RATE.**

- Pursuant to the final order of the Kentucky Public Service Commission in Case No. 2012-00578 and the Stipulation and Settlement Agreement dated June \_\_, 2013 as filed and approved by the Commission, Kentucky Power Company is to recover from retail ratepayers \$44 million annually beginning January 1, 2014 and ending when the Commission sets new base rates for the Company that include Mitchell Units 1 and 2.

- The allocation of the \$44 million revenue requirement between residential and all other customers shall be based upon their respective contribution to total retail revenues for the twelve month period ended September 30, 2013, according to the following formula:

$$\text{Residential Allocation RA(m)} = \frac{\$44,000,000}{12 \text{ months}} \times \frac{\text{KY Residential Retail Revenue RR(b)}}{\text{KY Retail Revenue R(b)}}$$

$$\text{All Other Allocation OA(m)} = \frac{\$44,000,000}{12 \text{ months}} \times \frac{\text{KY All Other Classes Retail Revenue OR(b)}}{\text{KY Retail Revenue R(b)}}$$

Where:

(m) = the expense month;

(b) = twelve month period ended September 30, 2013.

- The Residential Asset Transfer Adjustment shall provide for monthly adjustments based on a percent of total revenues, according to the following formula:

$$\text{Residential Asset Transfer Adjustment Factor} = \frac{\text{Net Monthly Residential Allocation NRA(m)}}{\text{Residential Retail Revenue RR(m)}}$$

Where:

$$\text{Net Monthly Residential Allocation NRA(m)} = \text{Monthly Residential Allocation RA(m), net of Over/(Under) Recovery Adjustment;}$$

$$\text{Residential Retail Revenue RR(m)} = \text{Monthly Retail Revenue for all KY residential classes for the expense month (m).}$$

- The All Other Classes Asset Transfer Adjustment shall provide for monthly adjustments based on a percent of non-fuel revenues, according to the following formula:

$$\text{All Other Classes Asset Transfer Adjustment Factor} = \frac{\text{Net Monthly All Other Allocation NOA(m)}}{\text{All Other Classes Non-Fuel Retail Revenue ONR(m)}}$$

Where:

$$\text{Net Monthly All Other Allocation NOA(m)} = \text{Monthly All Other Allocation OA(m), net of Over/(Under) Recovery Adjustment;}$$

$$\text{All Other Classes Non-Fuel Retail Revenue ONR(m)} = \text{Monthly Non-Fuel Retail Revenue for all classes other than residential for the expense month (m).}$$

- The monthly asset transfer rider adjustments shall be filed with the Commission ten (10) days before it is scheduled to go into effect, along with all the necessary supporting data to justify the amount of the adjustments, which shall include data, and information as may be required by the Commission.

- Copies of all documents required to be filed with the Commission shall be open and made available for public inspection at the office of the Public Service Commission pursuant to the provisions of KRS 61.870 to 61.884

DATE OF ISSUE XXXXXXXX

DATE EFFECTIVE SERVICE RENDERED ON AND AFTER JANUARY 1, 2014

ISSUED BY

TITLE: MANAGER OF REGULATORY SERVICES

BY AUTHORITY OF ORDER BY THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2012-00578 DATED

KENTUCKY POWER COMPANY

P.S.C. KY. NO. 10 ORIGINAL SHEET NO. 36-1  
 CANCELING P.S.C. KY. NO. 10 SHEET NO. 36-1

EXHIBIT 1-A  
 PAGE 1 of 2

**TARIFF A.T.R.-2**  
**(Asset Transfer Rider-2)**

**APPLICABLE.**

To Tariffs R.S., R.S.-L.M.-T.O.D., R.S.-T.O.D., Experimental R.S.-T.O.D.2, S.G.S., Experimental S.G.S.-T.O.D., M.G.S., M.G.S.-T.O.D., L.G.S., L.G.S.-T.O.D., Q.P., C.I.P.-T.O.D., C.S.-I.R.P., M.W., O.L. and S.L.

**RATE.**

1. Pursuant to the final order of the Kentucky Public Service Commission in Case No. 2012-00578 and the Stipulation and Settlement Agreement dated June \_\_, 2013 as filed and approved by the Commission, Kentucky Power Company is to recover from retail ratepayers the coal-related retirement costs of Big Sandy Unit 1, the retirement costs of Big Sandy Unit 2 and other site-related retirement costs that will not continue in use on a levelized basis over a 25 year period beginning when new base rates are set for the Company that include Mitchell Units 1 and 2.
2. The allocation of the levelized revenue requirement (LRR) between residential and all other customers shall be based upon their respective contribution to total retail revenues for the most recent calendar twelve month period, according to the following formula:

$$\text{Residential Allocation RA(m)} = \text{LRR(m)} \times \frac{\text{KY Residential Retail Revenue RR(b)}}{\text{KY Retail Revenue R(b)}}$$

$$\text{All Other Allocation OA(m)} = \text{LRR(m)} \times \frac{\text{KY All Other Classes Retail Revenue OR(b)}}{\text{KY Retail Revenue R(b)}}$$

Where:

(m) = the expense month;

(b) = Most recent available twelve calendar-month period ended December 31.

3. The Residential Asset Transfer Adjustment shall provide for monthly adjustments based on a percent of total revenues, according to the following formula:

$$\text{Residential Asset Transfer Adjustment Factor} = \frac{\text{Net Monthly Residential Allocation NRA(m)}}{\text{Residential Retail Revenue RR(m)}}$$

Where:

Net Monthly Residential Allocation NRA(m) = Monthly Residential Allocation RA(m), net of Over/(Under) Recovery Adjustment;

Residential Retail Revenue RR(m) = Monthly Retail Revenue for all KY residential classes for the expense month (m).

(Cont'd on Sheet No. 36-2)

DATE OF ISSUE XXXXXXXX

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BY AUTHORITY OF ORDER BY THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2012-00578 DATED

KENTUCKY POWER COMPANY P.S.C. KY. NO. 10 ORIGINAL SHEET NO. 36-2 EXHIBIT 1-A  
CANCELLING P.S.C. KY. NO. 10 SHEET NO. 36-2 PAGE 2 of 2

**TARIFF A.T.R.-2**  
**(Asset Transfer Rider-2)**

**RATE (Cont'd)**

1. The All Other Classes Asset Transfer Adjustment shall provide for monthly adjustments based on a percent of non-fuel revenues, according to the following formula:

$$\text{All Other Classes Asset Transfer Adjustment Factor} = \frac{\text{Net Monthly All Other Allocation NOA(m)}}{\text{All Other Classes Non-Fuel Retail Revenue ONR(m)}}$$

Where:

$$\text{Net Monthly All Other Allocation NOA(m)} = \text{Monthly All Other Allocation OA(m), net of Over(Under) Recovery Adjustment;}$$

$$\text{All Other Classes Non-Fuel Retail Revenue ONR(m)} = \text{Monthly Non-Fuel Retail Revenue for all classes other than residential for the expense month (m).}$$

2. The monthly asset transfer rider adjustments shall be filed with the Commission ten (10) days before it is scheduled to go into effect, along with all the necessary supporting data to justify the amount of the adjustments, which shall include data, and information as may be required by the Commission.
3. Copies of all documents required to be filed with the Commission shall be open and made available for public inspection at the office of the Public Service Commission pursuant to the provisions of KRS 61.870 to 61.884

DATE OF ISSUE XXXXXX

DATE EFFECTIVE SERVICE RENDERED ON OR AFTER JANUARY 1, 2014

ISSUED BY

TITLE : MANAGER REGULATORY SERVICES

BY AUTHORITY OF ORDER BY THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2012-00578 DATED

**EXHIBIT-2**

KENTUCKY POWER COMPANY

Original Sheet No. 29-1  
 Canceling Sheet No. 29-1

**TARIFF E.S.**  
 (Environmental Surcharge)

**APPLICABLE**

To Tariffs R.S., R.S.-L.M.-T.O.D., R.S.-T.O.D., Experimental R.S.-T.O.D. 2, S.G.S., Experimental S.G.S.-T.O.D., M.G.S., M.G.S.-T.O.D., L.G.S., L.G.S.-T.O.D., Q.P., C.I.P.-T.O.D., C.S.-I.R.P., M.W., O.L., and S.L.

**RATE**

In accordance with the Stipulation and Settlement Agreement approved by the Commission by its Order dated \_\_\_\_\_, 2013 in Case No. 2012-00578, the Monthly Environmental Surcharge Factor will be fixed and maintained at 0.00% until new base rates are first established by Commission after the effective date of this tariff without regard to the calculation of the Monthly Environmental Surcharge Factor under paragraphs 1 through 4 below. Coincident with the first establishment of new base rates after the effective date of this tariff, the retail share of the revenue requirement associated with this tariff will then be allocated between residential and non-residential retail customers based upon their respective total revenues. The Environmental Surcharge will be implemented as a percentage of total revenues for the residential class and as a percentage of non-fuel revenues for all other customers.

1. The environmental surcharge shall provide for monthly adjustments based on a percent of revenues, equal to the difference between the environmental compliance costs in the base period as provided in Paragraph 3 below and in the current period according to the following formula:

$$\text{Monthly Environmental Surcharge Factor} = \frac{\text{Net KY Retail E(m)}}{\text{KY Retail R(m)}}$$

Where:

$$\text{Net KY Retail E(m)} = \frac{\text{Monthly E(m) allocated to Kentucky Retail Customers, net of Over/ (Under) Recovery Adjustment; Allocation based on Percentage of Kentucky Retail Revenues to Total Company Revenues in the Expense Month.}}{\text{Month.}}$$

(For purposes of this formula, Total Company Revenues do not include Non-Physical Revenues.)

$$\text{KY Retail R(m)} = \text{Kentucky Retail Revenues for the Expense Month.}$$

2. Monthly Environmental Surcharge Gross Revenue Requirement, E(m)

$$E(m) = \text{CRR} - \text{BRR}$$

Where:

$$\text{CRR} = \text{Current Period Revenue Requirement for the Expense Month.}$$

$$\text{BRR} = \text{Base Period Revenue Requirement.}$$

3. Base Period Revenue Requirement, BRR

BRR = The Following Monthly Amounts:

Billing Month	Base Net Environmental Costs
JANUARY	\$ 3,991,163
FEBRUARY	3,590,810
MARCH	3,651,374
APRIL	3,647,040
MAY	3,922,590
JUNE	3,627,274
JULY	3,805,325
AUGUST	4,088,830
SEPTEMBER	3,740,010
OCTOBER	3,260,302
NOVEMBER	2,786,040
DECEMBER	4,074,321
	<u>\$44,185,079</u>

(Continued on Sheet 29-7)

DATE OF ISSUE XXXXXXXXXX DATE EFFECTIVE Service rendered on and after January 1, 2014

ISSUED BY LILA P. MUNSEY MANAGER REGULATORY SERVICES FRANKFORT, KENTUCKY  
 NAME TITLE ADDRESS

Issued by authority of an Order of the Public Service Commission in Case No. 2012-00578 dated XXXXXXXX

KENTUCKY POWER COMPANY

EXHIBIT -3  
Original Sheet No. 19-1  
Canceling \_\_\_\_\_ Sheet No. 19-1

P.S.C. ELECTRIC NO. 9

**TARIFF S. S. C.**  
(System Sales Clause)

**APPLICABLE.**

To Tariffs R.S., R.S.-L.M.-T.O.D., R.S.-T.O.D., Experimental R.S.-T.O.D.2, S.G.S., Experimental S.G.S.-T.O.D., M.G.S., M.G.S.-T.O.D., L.G.S., L.G.S.-T.O.D., Q.P., C.I.P.-T.O.D., C.S.-I.R.P., M.W., O.L. and S.L.

**RATE.**

In accordance with the Stipulation and Settlement Agreement approved by the Commission by its Order dated \_\_\_\_\_, 2013 in Case No. 2012-00578, the System Sales Adjustment Factor will be fixed and maintained at 0.0000 mills/kWh until new base rates are first established by Commission after the effective date of this tariff without regard to the calculation of the Monthly System Sales Adjustment Factor under paragraphs 1 through 7 below.

1. When the monthly net revenues from system sales are above or below the monthly base net revenues from system sales, as provided in paragraph 3 below, an additional credit or charge equal to the product of the KWHs and a system sales adjustment factor (A) shall be made, where "A", calculated to the nearest 0.0001 mill per kilowatt-hour, is defined as set forth below.

$$\text{System Sales Adjustment Factor (A)} = (.6 [T_m - T_b]) / S_m$$

In the above formulas "T" is Kentucky Power Company's (KPCo) monthly net revenues from system sales in the current (m) and base (b) periods, and "S" is the KWH sales in the current (m) period, all defined below.

The net revenue from American Electric Power (AEP) System sales to non-associated companies that are shared by AEP Member Companies, including KPCo, in proportion to their Member Load Ratio and as reported in the Federal Energy Regulatory Commission's Uniform System of Accounts under Account 447, Sales for Resale, shall consist of and be derived as follows:

- a. ~~KPCo's Member Load Ratio share of~~ total revenues from system sales as recorded in Account 447, less b. and c. below.
- b. ~~KPCo's Member Load Ratio share of~~ total out-of-pocket costs incurred in supplying the power and energy for the sales in a. above.

The out-of-pocket costs include all operating, maintenance, tax, transmission losses and other expenses that would not have been incurred if the power and energy had not been supplied for such sales, including demand and energy charges for power and energy supplied by Third Parties.

- c. KPCo's environmental costs allocated to non-associated utilities in the Company's Environmental Surcharge Report.

(Cont'd on Sheet No. 19-2)

DATE OF ISSUE XXXXXXXXXX DATE EFFECTIVE Service rendered on and after January 1, 2014

ISSUED BY LILA P. MUNSEY MANAGER REGULATORY SERVICES FRANKFORT, KENTUCKY  
NAME TITLE ADDRESS

Issued by authority of an Order of the Public Service Commission in Case No. 2012-00578 dated XXXXXXXX

EXHIBIT -5

KENTUCKY POWER COMPANY

P.S.C. KY. NO. 10 ORIGINAL SHEET NO. 35-1  
CANCELING P.S.C. KY. NO. 10 SHEET NO. 35-1

**TARIFF P.P.A.**  
(Purchase Power Adjustment)

**APPLICABLE.**

To Tariffs R.S., R.S.-L.M.-T.O.D., R.S.-T.O.D., Experimental R.S.-T.O.D.2, S.G.S., Experimental S.G.S.-T.O.D., M.G.S., M.G.S.-T.O.D., L.G.S., L.G.S.-T.O.D., Q.P., C.I.P.-T.O.D., C.S.-I.R.P., M.W., O.L. and S.L.

**RATE.**

1. The purchase power adjustment shall provide for monthly adjustments based on a percent of revenues, equal to the net costs of any power purchases in the current period according to the following formula:

$$\text{Monthly Purchase Power Adjustment Factor} = \frac{\text{Net KY Retail P(m)}}{\text{KY Retail R(m)}}$$

Where:

Net KY Retail P(m) = Monthly P(m) allocated to Kentucky Retail Customers, net of Over/(Under) Recovery Adjustment; Allocation based on Percentage of Kentucky Retail Revenues to Total Company Revenues in the Expense Month (m). (For purposes of this formula, Total Company Revenues include only Retail and Full-Requirements Wholesale revenues.)

KY Retail R(m) = Kentucky Retail Revenues for the Expense Month (m).

2. The net costs of any power purchased shall exclude costs recovered through the Fuel Adjustment Clause and shall be computed as the sum of the following items:
  - a. PPA(m) = The cost of power purchased by the Company through new Purchase Power Agreements (PPAs). All new PPAs shall be approved by the Commission to the extent required by KRS 278.300.
  - b. RP(m) = The cost of fuel related substitute generation less the cost of fuel which would have been used in plants suffering forced generation or transmission outages.
  - c. CSIRP(m) = The cost of any credits provided to customers under Tariff C.S.-I.R.P for interruptible service.

$$\text{Monthly P(m)} = \text{PPAm} + \text{RP(m)} + \text{CSIRP(m)}$$

3. The monthly purchase power adjustment shall be filed with the Commission ten (10) days before it is scheduled to go into effect, along with all the necessary supporting data to justify the amount of the adjustment, which shall include data, and information as may be required by the Commission.
4. Copies of all documents required to be filed with the Commission shall be open and made available for public inspection at the office of the Public Service Commission pursuant to the provisions of KRS61.870 to 61.884

DATE OF ISSUE XXXXXXXXXX

DATE EFFECTIVE SERVICE RENDERED ON AND AFTER JANUARY 1, 2014

ISSUED BY

TITLE: MANAGER OF REGULATORY SERVICES

BY AUTHORITY OF ORDER BY THE PUBLIC SERVICE COMMISSION

IN CASE NO. 2012-00578 DATED



Date July 17, 2012

Company Kentucky Power Company		CI/LI/CPPI/Program Number KYVVO2012	Version 1
Per Scope Review - Capital, Removal, Lease and O&M classifications appear to be appropriate		Reviewed by CP&B COW 7/17/12	BU/OPCo has verified funding is in budget. If not in budget, funding has been identified and fund transfer has been received. Reviewed by CP&B COW 7/17/12
ROUTING:	NAME	INITIALS & DATE RELEASED	COMMENTS
	B. A. MacPherson		
1	D. Lynch	DDL 7/17/12	
	L. L. Dieck	LLD 7/17/12	
	C. Zebula		
	B. X. Tierney		
	M. Heyeck		
	L. M. Barton		
	L.J. Weber		
	M.C. McCullough		
	B. D. Radous		
	D. E. Welch		
2	R. P. Powers	RPP 7/17/12	
	Buckeye Power Approval		
	N. K. Akins		
3	Cathy Warchal - 28th floor Ext 1347		
		7-26-12	Approved in PeopleSoft
		July 2012	Month Included in Board Package

Alternate CP&B Contacts:  
 Jenifer Fischer - 28th Floor - Ext 3032

Scanned File Name: KyPCo KYVVO2012 .pdf

## Capital Planning Proposal Approval Requisition

**Company:** Kentucky Power Company **Version 1**

**Project:** KYVVO2012 - Kentucky Volt/VAR Optimization  
 Various KY locations

**Description:** Kentucky Power requests approval for a project in Kentucky to reduce peak demand by 7 MW and energy usage by 32,000 MWH by adding Volt/VAR Optimization (VVO) to approximately 25 circuits. Such technology will assist Kentucky Power in achieving energy efficiency resource standards in Kentucky, as well as to cost effectively support retiring coal-fired generation at a levelized cost of under \$30/MWh.

This request represents the initial deployment of volt/var optimization in Kentucky Power's jurisdiction. Future deployments are planned and will be submitted for approval in future requests. When fully implemented across 151 Kentucky distribution feeders, a demand reduction of 33 MW and energy efficiency benefits of 154,000 MWH are expected to be achieved by summer peak of 2019. If all AEP PJM power pool members implement VVO systems, approximately 224 MW of capacity could be avoided by June 2015 and a total of 438 MW by June 2019.

Distribution Automation / Circuit Reconfiguration (CR) will also be installed on 14 circuits that are part of the VVO deployment and on 5 additional circuits. These circuits serve approximately 22,000 customers. When complete KPCO will have CR on 25 circuits serving 27,500 (16%) of its 175,000 customers. CR is projected to provide a 30% reduction in sustained customer outages on the circuits where it is applied. This improvement would reduce annual customer outages by 14,000 and customer outage minutes by 2,900,000. GE's GENE SCADA / Distribution Management System will be installed as part of this project.

**Authorization Amount:**

	Previously Approved Amount	This Submission	Total Amount to be Authorized
Distribution		13,781,731	13,781,731
Transmission		753,955	753,955
<b>Total</b>	<b>\$ -</b>	<b>\$ 14,535,686</b>	<b>\$ 14,535,686</b>

**Cash Flow:**

	Prior Years	2012	2013	Future Years	Total
<b>Capital</b>	\$ -	\$ 9,948,486	\$ 4,484,240	\$ -	\$ 14,432,726
<b>Removal</b>	\$ -	\$ 86,057	\$ 16,903	\$ -	\$ 102,960
<b>Total to be Authorized</b>	\$ -	\$ 10,034,543	\$ 4,501,143	\$ -	\$ 14,535,686
<b>Associated O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**Start Date:** 7/26/2012      **Completion Date:** 12/31/2013      **In Service Date:** 12/31/2013

**Regulatory Cost Recovery:** KPCo will file to include the Integrated Volt/Var Optimization (IVVO) pilot as part of its DSM/EE plan. As a DSM/EE program, KPCo will request concurrent recovery of all program costs, including capital, incremental O&M, and net lost revenues. If concurrent recovery is not granted, KPCo will seek recovery through KPCo-KY base rate case filing, TYE TBD, effective TBD.

**Funding:**      2012 Control Budget (included in IRC Presentation)      No      **Offset Source**      KyPC-D

*Future year funding - Offsets have been identified for 2013*

**Approved By:** G. Pauley/R. Powers

**Approved On:** 7/17/2012



## Capital Planning Proposal Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	14,432,726	102,960	14,535,686
<b>Total</b>	<b>\$ 14,432,726</b>	<b>\$ 102,960</b>	<b>\$ 14,535,686</b>



### 2012 Direct Cost Budget Funding

### Budget Offset Source and Amount

In Budget			
Budget Offset	\$ 7,819,000	<i>KyPCo-D Project 000012320 \$7,819,000</i>	

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	Opco President	Pauley, G	(See PRA for Electronic approval)	7/16/2012
amt ≤ \$ 20m	EVP & COO/EVP	Powers, R.		7/17/12
amt ≥ \$ 20m	President & CEO			
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		7/17/12

### Project Contacts

Contact	Name	Telephone
Project Manager	Ron Canfield	600-1462
Requisition Detail Provider	Brent McMillion	313-2764

## Capital Planning Proposal Approval Requisition

### Component CI's

CI Number	Description of Work	Previously Approved		This Submission		Total Authorized		
		Capital	Removal	Capital	Removal	Capital	Removal	Total
KYVVO12DL	D-Line - Volt/VAR	-	-	3,565,469	43,513	3,565,469	43,513	3,608,982
KYVVO12DS	D-Station - Volt/VAR	-	-	2,153,948	17,107	2,153,948	17,107	2,171,055
KYVVO12DC	D-Line - Volt/VAR	-	-	438,000	9,347	438,000	9,347	447,347
KYVVO12TL	T-Line - Volt/VAR	-	-	24,395	605	24,395	605	25,000
KYVVO12TS	T-Station - Volt/VAR	-	-	447,231	3,788	447,231	3,788	451,019
KYCR012DL	D-Line - Circuit Reconfiguration	-	-	4,917,004	15,665	4,917,004	15,665	4,932,669
KYCR012DS	D-Station - Circuit Reconfiguration	-	-	1,212,998	5,000	1,212,998	5,000	1,217,998
KYCR012TL	T-Line - Circuit Reconfiguration	-	-	24,999	604	24,999	604	25,603
KYCR012TS	T-Station - Circuit Reconfiguration	-	-	245,002	7,331	245,002	7,331	252,333
KYVVO12SC	D-Line - SCADA	-	-	1,403,680	-	1,403,680	-	1,403,680
<b>Grand Total</b>		\$ -	\$ -	\$ 14,432,726	\$ 102,960	\$ 14,432,726	\$ 102,960	\$ 14,535,686

## Capital Planning Proposal Approval Requisition

### Project Justification

AEP Ohio has successfully deployed volt/var optimization (VVO) technology from GE on 11 distribution feeders as part of its DOE gridSMART demonstration project and, through independent analyses performed by Battelle, has achieved a demand reduction of 3.0% and an energy reduction of 2.9%. In addition, AEP Ohio has deployed PCS UtiliData's VVO technology on 6 distribution feeders and initial performance suggests that a demand reduction of 3+% and an energy reduction of 3+% can be achieved during on peak periods. Public Service Company of Oklahoma is near completion of implementing the Cooper Power Systems Yukon Volt/Var system on 11 circuits in Owasso, Oklahoma. To date, installation of VVO equipment has averaged \$250,000/feeder.

Such demand and energy benefits are achieved by installing distribution automation volt/var control (DAVVC) schemes which integrate distribution capacitor/regulator banks and transformer load tap changers with a centralized control system to flatten the voltage profile and lower the delivery voltage level at the substation by 3-4%. These systems have successfully been able to maintain voltage above the ANSI standard service range of 114 volts for all customers on a distribution feeder.

Currently an engineering review is being conducted of these feeders to identify opportunities to improve the performance of the VVO systems. AEP has also met with vendors to establish goals to improve the VVO technology to maximize the demand and energy efficiency benefits, to develop a regulatory acceptable measurement and verification capability and to improve modeling tools to be able to install such equipment on large volumes of feeders each year. Installation of VVO equipment on the initial distribution feeders in Kentucky is estimated to cost \$250,000/feeder; however, AEP has negotiated arrangements with a number of vendors that will result in an "open book" deployment with a focus upon equipment, process and installation cost savings that is expected to reduce the installation cost per feeder when installed on a large scale basis.

Initial modeling of this pilot suggests that the technology installation cost is equivalent to \$910/kW when compared to other "supply" alternatives, has a Total Resource Cost score of 3.0. The Integrated Resource Planning tool has selected significant amounts of VVO to be installed in the future. VVO technology will cause meters to slow down from historical levels which results in a reduction in "fixed cost" recovery. In addition, on-going O&M expenses to support the VVO system are estimated to cost \$187,000. KPCO plans to request recovery of these costs via traditional energy efficiency mechanisms.

Distribution capacitors will be installed to correct the power factor to near unity on the VVO circuits. This additional power factor correction will reduce losses on the circuits and provide additional voltage support to help the VVO system flatten the voltage profile so that the average voltage level can be reduced during VVO operation. Approximately 34 banks of capacitors are planned and this should reduce about 14 MVA of load across the VVO stations and circuits which will help delay the need for capacity improvements.

Distribution Automation / Circuit Reconfiguration (CR) will also be installed on 14 circuits that are part of the VVO deployment and on 5 additional circuits. These circuits serve approximately 22,000 customers. When complete KPCO will have CR on 25 circuits serving 27,500 (16%) of its 175,000 customers. CR is projected to provide a 30 % reduction in sustained customer outages on the circuits where it is applied. This improvement would reduce annual customer outages by 14,000 and customer outage minutes by 2,900,000.

## Capital Planning Proposal Approval Requisition

GE's GENE SCADA / Distribution Management System will be installed as part of this project. The DMS will provide decision support capabilities to assist distribution dispatchers and field personnel to:

- monitor and control switches and relays that perform service restoration (via circuit reconfiguration control equipment);
- control voltage and var for demand reduction and energy efficiency;
- analyze fault anticipation and detection technologies;
- manage and control distributed renewable energy sources such as storage, and customer-owned generation;
- provide an interface with existing transmission energy management systems;
- provide additional distribution SCADA functionality, such as load measurement and equipment status monitoring;
- provide near real-time network visualization and modeling based on existing asset information.

This implementation will improve AEP's ability to manage voltage and var optimization (VVO) systems as well as to efficiently and effectively track and manage millions of distribution assets used in all facets of distribution construction, operation and maintenance and many key accounting, financial, and regulatory processes. Storm restoration efforts will be enhanced leading to sustained reliability and customer satisfaction.

### Other Alternatives Considered

New source alternatives to meet future demand and energy requirements would be required. However, the Integrated Resource Planning process suggests that VVO is the best economic alternative.

Increasing investment in traditional reliability improvement programs was considered. However, installation of Circuit Reconfiguration can provide a significant and sustainable step change in reliability for the key areas where it is being applied.

### Conclusion

In order to demonstrate AEP's ability to scale up a very promising demand response and energy efficiency technology, Kentucky Power is requesting approval for a project to reduce peak demand by 7 MW and energy usage by 32,000 MWH by installing Volt/VAR Optimization (VVO) to approximately 25 circuits. Such technology will assist Kentucky Power in achieving energy efficiency resource standards in Kentucky, as well as to cost effectively replace retiring coal fired generation at a levelized cost of under \$30/MWh.

This request represents Phase 1 of a multi-phase project to deploy volt/var optimization in Kentucky Power's jurisdiction. When fully implemented across 151 Kentucky distribution feeders, a demand reduction of 33 MW and energy efficiency benefits of 154,000 MWH are expected to be achieved by summer peak of 2019, at an estimated cost of \$ 37.8 million. If all AEP PJM power pool members implement VVO systems, approximately 224 MW of capacity could be avoided by June 2015 and 447 MW could be reduced in PJM by the end of the implementation program.

## Capital Program Approval Requisition One Page Summary

<b>Company:</b>	AEP SYSTEM	<b>Version: 2</b>																																																		
<b>Project:</b>	REGRTU - Regulated RTU Modernization Program - - Revision																																																			
<b>Location:</b>	1 Riverside Plaza, Columbus Ohio																																																			
<b>Description:</b>	<p>A Remote Terminal Unit (RTU) is the communication interface between generation plant systems and SCADA (Supervisory Control and Data Acquisition) systems. RTU's are located at the generation plant, collects the relevant plant data and converts the data into a transmittable signal. SCADA systems, Plant Information (PI) and Generation Market Control System (GMCS) are located in the Columbus Arena building and Roanoke. Accurate RTU data is critical to the sustainability, reliability and operation of the generation fleet because:</p> <ul style="list-style-type: none"> <li>• Data is sent to AEP Transmission and to respective RTOs (PJM, SPP, ERCOT) for both settlements and monitoring of the bulk electric system purposes</li> <li>• RTUs transfer the requested plant loading from GMCS back to the generation plant</li> <li>• Critical data points identified by NERC are communicated to RTO's and Dispatchers</li> <li>• Without this data, RTO's may not allow a unit to come or stay online</li> </ul> <p>RTU's and the related telecom infrastructure at the generation plants are outdated and need to be upgraded for sustainability and regulatory compliance reasons. This initiative is to modernize the RTU infrastructure at 50 generation sites (excluding any unit that is slated for retirement) and implement Physical Security Perimeter equipment at Regulated owned generation plants to adhere to NERC CIP v5 requirements that need to be in place by Q1 2016.</p>																																																			
<b>Revision Reason:</b>	This revision is an administrative revision to add one component project. The scope and total actual dollars are not changing.																																																			
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 25%;">Company</th> <th style="width: 25%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEG</td> <td>APP_SYS_SW</td> <td>\$149,215</td> <td>\$0</td> <td>\$149,215</td> </tr> <tr> <td>AEPSC</td> <td>APP_SYS_SW</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>APCO</td> <td>APP_SYS_SW</td> <td>\$2,196,144</td> <td>\$0</td> <td>\$2,196,144</td> </tr> <tr> <td>IMPSCO</td> <td>APP_SYS_SW</td> <td>\$1,342,922</td> <td>\$0</td> <td>\$1,342,922</td> </tr> <tr> <td>KYPCO</td> <td>APP_SYS_SW</td> <td>\$298,428</td> <td>\$0</td> <td>\$298,428</td> </tr> <tr> <td>PSO</td> <td>APP_SYS_SW</td> <td>\$1,492,133</td> <td>\$0</td> <td>\$1,492,133</td> </tr> <tr> <td>SWEPSCO</td> <td>APP_SYS_SW</td> <td>\$1,641,348</td> <td>\$0</td> <td>\$1,641,348</td> </tr> <tr> <td>TNC</td> <td>APP_SYS_SW</td> <td>\$149,215</td> <td>\$0</td> <td>\$149,215</td> </tr> <tr> <td colspan="2"><b>Total</b></td> <td><b>\$7,269,405</b></td> <td><b>\$0</b></td> <td><b>\$7,269,405</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEG	APP_SYS_SW	\$149,215	\$0	\$149,215	AEPSC	APP_SYS_SW	\$0	\$0	\$0	APCO	APP_SYS_SW	\$2,196,144	\$0	\$2,196,144	IMPSCO	APP_SYS_SW	\$1,342,922	\$0	\$1,342,922	KYPCO	APP_SYS_SW	\$298,428	\$0	\$298,428	PSO	APP_SYS_SW	\$1,492,133	\$0	\$1,492,133	SWEPSCO	APP_SYS_SW	\$1,641,348	\$0	\$1,641,348	TNC	APP_SYS_SW	\$149,215	\$0	\$149,215	<b>Total</b>		<b>\$7,269,405</b>	<b>\$0</b>	<b>\$7,269,405</b>
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<b>Project Dates:</b>	<b>Start Date :</b> 06/09/2014 <b>In Service Date :</b> 12/18/2015 <b>Completion Date:</b> 12/18/2015																																																			
<b>Regulatory Cost Recovery:</b>																																																				
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> No																																																		
<b>Approved By :</b>	<b>Approved On :</b> 07/31/2014																																																			

## Capital Program Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>1901</b>	<b>1902</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$0	\$0	\$6,477,326	\$6,477,326
	<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$6,477,326</b>	<b>\$6,477,326</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Jenifer L Fischer	07/31/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	REBER,RYAN A
		Project Manager	SHEPHERD,ANDREA K

## Capital Program Approval Requisition

### Component CI's

Component ID	Company	Description of Work	Previously Approved (\$)		This Submission (\$)		Total Authorized (\$)		
			Capital	Removal	Capital	Removal	Capital	Removal	Total
IT3751321	AEG	Regulated RTU Project - AEG	149,215	0	0	0	149,215	0	149,215
<b>AEG Total :</b>			<b>149,215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>149,215</b>	<b>0</b>	<b>149,215</b>
ITGEN1321	AEPSC	REG RTU Project-All Reg Units	0	0	0	0	0	0	0
<b>AEPSC Total :</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
IT2151321	APCO	Regulated RTU Project - APCO	2,196,144	0	0	0	2,196,144	0	2,196,144
<b>APCO Total :</b>			<b>2,196,144</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,196,144</b>	<b>0</b>	<b>2,196,144</b>
IT1901321	IMPCO	Regulated RTU Project - COOK	149,215	0	0	0	149,215	0	149,215
IT1321321	IMPCO	Regulated RTU Project - I&M	1,193,707	0	0	0	1,193,707	0	1,193,707
<b>IMPCO Total :</b>			<b>1,342,922</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,342,922</b>	<b>0</b>	<b>1,342,922</b>
IT1171321	KYPCO	Regulated RTU Project - KPCO	298,428	0	0	0	298,428	0	298,428
<b>KYPCO Total :</b>			<b>298,428</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>298,428</b>	<b>0</b>	<b>298,428</b>
IT1981321	PSO	Regulated RTU Project - PSO	1,492,133	0	0	0	1,492,133	0	1,492,133
<b>PSO Total :</b>			<b>1,492,133</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,492,133</b>	<b>0</b>	<b>1,492,133</b>
IT1681321	SWEPCO	Regulated RTU Project - SWEPCO	1,641,348	0	0	0	1,641,348	0	1,641,348
<b>SWEPCO Total :</b>			<b>1,641,348</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,641,348</b>	<b>0</b>	<b>1,641,348</b>
IT1661321	TNC	Regulated RTU Project - TNC	149,215	0	0	0	149,215	0	149,215
<b>TNC Total :</b>			<b>149,215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>149,215</b>	<b>0</b>	<b>149,215</b>
<b>Grand Total :</b>			<b>7,269,405</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7,269,405</b>	<b>0</b>	<b>7,269,405</b>

## Capital Program Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>Existing RTU and Telecom equipment at Regulated generation units are outdated; support provided by manufacturers/external service providers is being reduced due to lack of resources and will be discontinued in 2016. The Regulated RTU Modernization program has the following objectives:</p> <ul style="list-style-type: none"> <li>• Strengthen the Regulated Generation's infrastructure by replacing outdated and soon to be unsupported technology.</li> <li>• Ensure the Regulated Generation is correctly positioned for future RTO system regulation opportunities and fleet generation maximization.</li> <li>• Reduce system complexity between RTU and GMCS by no longer relying on Transmission owned assets, reliance on pulse controlled units and SCADA Management Platform.</li> <li>• Compliance to the requirements of NERC CIP v5 regulation by the installation of physical security perimeter around the Distributed Control System at the Regulated owned generation units.</li> </ul> <p>Transmission and Energy Supply have already launched CI's to replace their legacy RTU infrastructure owned by them.</p>
<b>Other Alternatives Considered:</b>	<p>"Doing Nothing" alternative: Reliability and regulatory risks will continue to escalate. If no action is taken to mitigate the risks associated with the mandated requirements/rules surrounding maintaining critical operational functionality of the Bulk Electric System, AEP (Regulated) could be subject to potential fines from FERC/NERC. O&amp;M fees for existing analog leased lines will continue to increase and are projected to be 2.8 times greater at the end of 2016 due to legacy technology.</p>
<b>Conclusion:</b>	<p>The Regulated RTU Modernization program is to be launched to mitigate operational risks, increase sustainability and to address new compliance requirements for NERC CIP version 5.</p>





# American Electric Power IT Project Initiation

## 11-0406 GENPFS – Executive Summary Database

### Revision History

<i>Date</i>	<i>Version</i>	<i>Description</i>	<i>Author</i>
06/02/2014	1.0	Initial Draft	John E Grimm
06/04/2014	1.1	Updated based on feedback from Generation	John E Grimm
06/05/2014	1.2	Updated benefits section	John E Grimm

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1.3	<b>Functionality Requested</b> .....	3
1.4	<b>Out of Scope (optional)</b> .....	4
1.5	<b>Constraints/Assumptions</b> .....	4
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# 1 PROJECT DEFINITION

## 1.1 BUSINESS PROBLEM/OPPORTUNITY

Generation Major Projects uses multiple technology Project Management tools to manage their \$500M+ annual Capital project portfolio. Executive Summaries are a project management status report routed monthly for approval from the PRISM system that tracks budgets, actuals to date, forecasts, and estimate at completion of each project.

Executive Summaries are produced and submitted by the Cost Analysts, which requires signatures from the Cost Analyst, Project Accountant, Project Controls Supervisor, and the Project Manager. Currently these are handled by signing a hard copy and manually routing to each required approver. There are often logistics issues since Project Managers and Supervisors are sometimes at the jobsites which could result in a delay to the process.

Because team member roles and responsibilities on projects may change, a project member web site will be created so team members can be identified during project set up and maintained current as changes occur. The team member roles will then be used for routing approval.

## 1.2 PROJECT SCOPE

The request is to develop an approval routing system (similar to CIRS, FERS and MARS) in PMM for these executive summary documents. Handling the signoff process electronically will allow for a more efficient review and approval of executive cost summaries, as well as electronically fulfill a SOX mandate to keep signatures of financial approvals on file. Additionally, a warehouse of these documents should satisfy management for review of a portfolio of projects that are tied to the role and responsibility website.

## 1.3 FUNCTIONALITY REQUESTED

- 1) PMM will be used to save the Executive Summaries. Users will still create the PDF outside of the system and then save them in the system.
- 2) A new PMM team member website will be created and used for routing approvals. This will provide a way to use the current PMM Project set up in PMM to drive a web based application for recording who the key players are on a Project where all users can update and access. This web based application will also be used by the current PMM routing systems CIRS, FERS, CLRS and MARS.
- 3) A notification system for routing approvals will be enhanced for Executive Summaries. This will use the PMM Notification server, but it would involve making changes to PMM Notification Server Code
- 4) Executive Summary routing logic will handle Comments, rejections and recalls of approval requests

## 1.4 OUT OF SCOPE (OPTIONAL)

N/A

## 1.5 CONSTRAINTS/ASSUMPTIONS

Assuming this routing system will be modeled after the existing CIRS, FERS and MARS system and use the PMM Notification Server.

No new infrastructure is required

## 1.6 PROPOSAL TEAM

Name	Title	Role
Brian Sherrick	Executive Sponsor	To assure the project scope is clearly defined and is correct; to assess further phases of the project.
Bill King, Jeff Taris	Subject Matter Expert (SME)	Provide detailed requirements.

## 1.7 BUSINESS DATE DRIVERS (OPTIONAL)

There is no compliance date driver for this project. Generation has requested that this project be implemented in 2014.

## 1.8 PROJECT URGENCY

Medium – 2

## 2 BUSINESS CASE

### 2.1 OPTIONS

<b>Option</b>	<b>Strengths (Internal)</b>	<b>Weaknesses (Internal)</b>	<b>Opportunities (External)</b>	<b>Threats (External)</b>
<b>No Action</b>	No IT time or \$ spent.	Continue manual process		
<b>Option 1 –</b> <Enhance Executive Summary capability in PMM> (Recommended)	Promotes continuous improvement, saves wasted hours trying to track down people for signatures especially when some analysts have 10-20 projects.	Time & \$ to implement solution and maintain staffing database	Improved response time and customer service	None

### 2.2 COST (A BREAKDOWN OF THE PROJECT COSTS AND RELATED FINANCING OF THE RECOMMENDED OPTION)

#### 2.2.1 FUNDING SOURCE

<b>Benefiting Location:</b>	1006	<b>Rationale:</b>	PMM is used to support construction projects at all the plants
<b>Attribution Basis:</b>	48G	<b>Rationale:</b>	PMM is used to support both regulated and competitive plants
<b>Project Costing Business Unit (PCBU):</b>	SHSVC – Shared Services		
<b>Billable Business Unit (BBU):</b>	Generation		
<b>Funding Sources:</b>	IT will fund IT labor and Generation will fund their labor		

#### 2.2.2 CLASS 5 – SCOPING ESTIMATE

<b>Class 5 - Scoping Estimate</b>	<b>Lower Range (-50%)</b>	<b>Upper Range (+100%)</b>
\$65,000	\$32,500	\$130,000

<b>Funding Requested to Produce Class 4 - High-Level Estimate</b>	
\$3,250	Standard 5%

**Class 5 - Scoping Estimate**

	2014	2015	2016	2017	2018	Total
<b>One Time Project Costs</b>						
<b>Capital</b>						
<i>IT</i>						
Internal Labor	\$ 50,000.00					\$ 50,000.00
External Labor	\$ 10,000.00					\$ 10,000.00
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total IT</b>	<b>\$ 60,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 60,000.00</b>
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Business Unit</i>						
Internal Labor	\$ 5,000.00					\$ 5,000.00
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Business Unit</b>	<b>\$ 5,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 5,000.00</b>
<b>Total Capital</b>	<b>\$ 65,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 65,000.00</b>
<b>O&amp;M</b>						
<i>IT</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total IT</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Business Unit</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Business Unit</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Total O&amp;M</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Total One Time Project Costs</b>	<b>\$ 65,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 65,000.00</b>
<b>Recurring Costs</b>						
<b>O&amp;M</b>						
<i>IT</i>						
Internal Labor						\$ -
External Labor						\$ -
Software						\$ -
Hardware						\$ -
Other						\$ -
<b>Total IT</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Software						\$ -
Hardware						\$ -
Other						\$ -
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Business Unit</i>						
Internal Labor						\$ -
External Labor						\$ -
Software						\$ -
Hardware						\$ -
Other						\$ -
<b>Total Business Unit</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Total O&amp;M</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Total Recurring Costs</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Proposal Total</b>	<b>#####</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>#####</b>

### 2.2.3 CLASS 4 – HIGH-LEVEL ESTIMATE

<b>Class 4 - High-Level Estimate</b>	<b>Lower Range (-30%)</b>	<b>Upper Range (+50%)</b>

<b>Funding Requested to Produce Class 2 - Commit Estimate</b>	
<percentage/\$ amount of Class 2 – Commit Estimate>	<Explanation if different than 25%>



**Class 4 - High-Level Estimate**

	2014	2015	2016	2017	2018	Total
<b>One Time Project Costs</b>						
<b>Capital</b>						
<i>IT</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total IT</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Infrastructure</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Business Unit</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Business Unit</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Capital</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>O&amp;M</b>						
<i>IT</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total IT</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Infrastructure</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Business Unit</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Business Unit</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total One Time Project Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Recurring Costs</b>						
<b>O&amp;M</b>						
<i>IT</i>						
Internal Labor						\$ -
External Labor						\$ -
Software						\$ -
Hardware						\$ -
Other						\$ -
<b>Total IT</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Software						\$ -
Hardware						\$ -
Other						\$ -
<b>Total Infrastructure</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Business Unit</i>						
Internal Labor						\$ -
External Labor						\$ -
Software						\$ -
Hardware						\$ -
Other						\$ -
<b>Total Business Unit</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total O&amp;M</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Recurring Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Proposal Total</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

## 2.3 BENEFITS (THE COST OF THE PROJECT COMPARED TO THE EXPECTED RETURNS)

### 2.3.1 QUANTITATIVE VALUE/COSTS

	2014	2015	2016	2017	2018
<b>Type 1 Benefits</b>					
Increased Revenue					
Decreased Expenses					
<b>Type 2 Benefits</b>					
Avoided Costs					
Opportunity Cost					
<b>Costs (Direct Capital)</b>					
Cost to Achieve	\$ (65,000)				
<b>Costs (O&amp;M)</b>					
<b>Total</b>	<b>\$ (65,000)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

Net Present Value (NPV): \$ (59,907.83)

Discount Rate: 8.50%

### 2.3.2 QUALITATIVE VALUE

	2014	2015	2016	2017	2018
<b>Project Team</b>					
Cost Analyst	1.0	1.0	1.0	1.0	1.0
Project Account	0.1	0.1	0.1	0.1	0.1
PC Supv	0.1	0.1	0.1	0.1	0.1
PM	0.1	0.1	0.1	0.1	0.1
Hours	1.3	1.3	1.3	1.3	1.3
Executive Summaries	79	53	56	77	74
Months	4	12	12	12	12
Rate	\$ 75.00	\$ 77.25	\$ 79.57	\$ 81.95	\$ 84.41
Annual	\$ 30,810	\$ 63,870	\$ 69,510	\$ 98,444	\$ 97,447
<b>Support Team</b>					
Admin	2.0	2.0	2.0	2.0	2.0
Management	5.0	5.0	5.0	5.0	5.0
Staffing DB Benefits	5.0	5.0	5.0	5.0	5.0
Hours	12.0	12.0	12.0	12.0	12.0
Months	4	12	12	12	12
Rate	\$ 75.00	\$ 77.25	\$ 79.57	\$ 81.95	\$ 84.41
Annual	\$ 3,600	\$ 11,124	\$ 11,458	\$ 11,801	\$ 12,155
<b>Total</b>	<b>\$ 34,410</b>	<b>\$ 74,994</b>	<b>\$ 80,968</b>	<b>\$ 110,245</b>	<b>\$ 109,602</b>

Each month, the Cost Analyst hand routes the Executive Summary to members of the Project Team. The time necessary to walk this document through the approvers for ink signatures is significant. The estimate for the Project Team was developed using the following assumptions:

- Cost Analyst spends 1 hour per month printing, signing and routing
- Project Accountant spends 0.1 hour copying and returning
- PC Supervisor spends 0.1 hour copying and returning
- PM [Project Manager] spends 0.1 hour copying and returning
- The annual forecast for the number of Executive Summaries was taken from the March 14 LRP update

After they are routed and approved, the documents are collected by the Admin, scanned, and sorted into individual folders by manager and managing director. This is performed electronically, but requires a significant amount of file manipulation. Management then receives a link to the appropriate folder, however, there is no indexing and the search process for specific documents requires scrolling through often very large .pdf files. Finally, there is current no central database maintained for Project Team members.

The estimate for the Support Team was developed using the following assumptions:

- Admin spends an average of 2 hours per month scanning and manipulating Executive Summaries
- Across the entire organization, Management spends an average of 5 hours per month searching for Executive Summaries
- Across the entire organization, personnel spend an average of 5 hours per month searching for updated team members lists or correcting mis-routings.

For both sections, the following assumptions apply:

- The number of months was reduced for 2014, assumes an August implementation
- The average hourly rate is stated at \$75.00 consistent with project PMEC estimates

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 2**

**Project :** ITGEN1208 Ohio Generation Corporate Separation  
 1 Riverside Plaza, Columbus, Ohio

**Description:** As part of the AEP Ohio Electric Security Plan (ESP), the Public Utilities Commission of Ohio (PUCO) has mandated that AEP Ohio generation assets will be separated from AEP Ohio regulated assets. Also, AEP Ohio generation assets will become unregulated and separated from the AEP eastern generation power pool. This project will address the Information Technology (IT) applications to support the AEP Ohio Generation function, and lay the foundation for work with other AEP business application areas that will be affected by the Corporate Separation order, particularly Commercial Operations, Generation and other AEP Service Corporation entities. The intent is to provide the least cost, lowest risk solution that provides the affected Business Units (BU's) with the capabilities necessary to achieve corporate separation.

This initial Capital Improvement (CI) is based on a cursory review of the application portfolio which has identified the applications potentially impacted by the AEP Ohio Generation Corporate Separation. Planning activities will determine implementation and infrastructure requirements for this effort, as well as including a more in-depth analysis of affected integrations, BU supported applications and non-application data stores. It is expected that the planning activities will result in a commit level estimate by March of 2013. At that time, if a revision to the CI is required, it will be submitted for approval.

**Reason for Revision:** This project will address the IT and BU applications to support the AEP Ohio Generation function, Wheeling Power / Appalachian Power merger and the East Power Coordination Agreement changes.

The initial CI was for the planning phase only and based on the analysis done in this phase, a CI revision is required for the implementation effort.

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ 791,481	\$ 8,540,518	\$ 9,331,999

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ 87,830	\$ 8,316,062	\$ 928,107	\$ -	\$ 9,331,999
<b>Total to be Authorized</b>	\$ 87,830	\$ 8,316,062	\$ 928,107	\$ -	\$ 9,331,999
<b>Net AEP Cash Flow</b>	\$ 87,830	\$ 8,316,062	\$ 928,107	\$ -	\$ 9,331,999
<b>Associated O&amp;M</b>	\$ 91	\$ 290,937	\$ 200,161	\$ 131,338	\$ 622,527

**Start Date:** 9/1/2012      **Completion Date:** 6/30/2014      **In Service Date:** 6/30/2014

**Regulatory Cost Recovery:** See Page 5

**Funding:** Included in IRC Presentation  Yes  Project Funded  Yes  Offset Source

*Requested future year funds are included in the last official Forecast.*

**Approved By:** \_\_\_\_\_ **Approved On:** \_\_\_\_\_

## Capital Improvement Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	791,481	-	791,481
This Submission	8,540,518	-	8,540,518
<b>Total</b>	<b>\$ 9,331,999</b>	<b>\$ -</b>	<b>\$ 9,331,999</b>

### 2013 Direct Cost Budget Funding

### Budget Offset Source and Amount

In Budget	\$ 6,337,877	<i>(If budget offset, provide Opco, BU, Project ID, \$'s)</i>
Budget Offset	-	

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	
amt ≤ \$ 10m	East Operating Company Presidents	Pablo Vegas	See electronic approval attached	
amt ≤ \$ 20m	EVP Energy Supply	Chuck Zebula		
amt ≤ \$ 10m	SVP Fuel, Emissions & Logistics	Tim Light	See electronic approval attached	
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		

### Project Contacts

Contact	Name	Telephone
Project Manager	Dick Mills	220-6710
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

#### Reason for Revision:

This project will address the IT and BU applications to support the AEP Ohio Generation function, Wheeling Power / Appalachian Power merger and the East Power Coordination Agreement changes. The initial CI was for the planning phase only and based on the analysis done in this phase, a CI revision is required for the implementation effort.

Corporate separation is a requirement of the Public Utilities Commission of Ohio (PUCO) approved AEP Ohio Electric Security Plan (ESP). Based on that plan, AEP has filed for Federal Energy Regulatory Commission (FERC) approval to achieve corporate separation of the Ohio Power generation and marketing businesses, to terminate the current Interconnection Agreement, and to merge Wheeling Power into Appalachian Power.

IT and the Business Units (BU's) have worked together to identify the IT systems impacted by Ohio Generation Corporate Separation. Application requirements have been documented and reviewed with stakeholders and proposed solutions have been determined and estimated.

This project will address Commercial Operations, Generation, Transmission, Utilities and Corporate business applications to implement the three scope areas across the organization.

The breakdown of costs in this CI by scope area is as follows:

#### Ohio Generation Corporate Separation

The estimated fully loaded capital costs associated with the Ohio Generation Corporate Separation are: \$87,830 in 2012; \$5,713,950 in 2013; and \$545,073 in 2014.

#### New Power Coordination Agreement

AEP has filed with FERC to terminate its current East Operating Agreement. The East Operating Agreement provided the terms and conditions for the east operating companies (Appalachian Power, Kentucky Power, Indiana Michigan Power and Ohio Power) to share and settle capacity and energy among the four east operating companies, largely based on a member load ratio and an energy cost reconstruction process. AEP has filed a Power Coordination Agreement with FERC. This change will require each company to have a stand-alone energy cost reconstruction process. This will require significant system modifications to properly execute the reconstruction process along with any other transactions defined in the agreement. The estimated fully loaded capital costs associated with the Power Coordination agreement are: \$1,292,508 in 2013; and \$195,567 in 2014.

#### Merger of Wheeling Power into Appalachian Power

AEP has filed with FERC and the appropriate state regulatory agencies to merge Wheeling Power into Appalachian Power. The estimated fully loaded capital costs associated with the merger are: \$1,309,604 in 2013; and \$187,467 in 2014.

#### Corporate Separation O&M Expense Summary

IT will incur O&M expenses in support of the overall program. This includes the annual costs for the hardware that will be allocated to the new instances of a few applications for both Commercial Operations and Generation along with the infrastructure labor associated with this work. There is also some O&M labor to support the data conversions needed to support the merger of Wheeling into APCO.

### Other Alternatives Considered

During the planning phase, IT worked with application owners to determine requirements and a proposed solution. These business case solutions for each application have been reviewed with Business Unit stakeholders and management. Solutions include physical and logical application separation.

Since separation has been mandated via the ESP and Corporate Separation orders, not performing these activities is not a viable business alternative.

## Capital Improvement Approval Requisition

### Conclusion

Based on the Ohio order and deregulation law and the FERC filings, AEP will need modifications to its IT applications to support its business and operational functions.

### Associated/Future Projects

None

### Financial Information

<i><b>Total Capital Costs</b></i>	<i><b>Total Cost</b></i>			<i><b>Direct Costs</b></i>		
	<i><b>IT</b></i>	<i><b>BU</b></i>	<i><b>Total</b></i>	<i><b>IT</b></i>	<i><b>BU</b></i>	<i><b>Total</b></i>
Internal Labor	4,278,043	519,977	4,798,020	4,278,043	519,977	4,798,020
Outside Services - Labor	1,759,733	29,000	1,788,733	1,759,733	29,000	1,788,733
Outside Services Software	439,920	-	439,920	439,920	-	439,920
Material	-	-	-	-	-	-
Other Cost Category	68,599	7,920	76,519	68,599	7,920	76,519
Fleet	-	-	-	-	-	-
Fringes/Incentives	1,987,017	241,790	2,228,807	-	-	-
AFUDC	-	-	-	-	-	-
<i><b>Total Capital Costs</b></i>	<b>8,533,312</b>	<b>798,687</b>	<b>9,331,999</b>	<b>6,546,295</b>	<b>556,897</b>	<b>7,103,192</b>



## Capital Improvement Approval Requisition

### Regulatory Cost Recovery

#### East PCA & APCo/WP Merger

Appalachian Power Company - Generation – \$1.67M (17.9%)

> \$0.78M (47%) APCo VA base rate case filing, TYE 12/31/2013, with cost projections through 1/31/2016, effective 1/31/2015.

> \$0.72M (43%) APCo WV base rate case filing, TYE 12/31/2013, with cost projections through 12/31/2014, effective 2/1/2015.

> \$0.10M (6%) KgPCo purchased power pass-through from APCo under three-year settlement agreement phase-in of generation rates through 12/31/11 remains in effect post-2011 until new agreement is in place.

> \$0.07M (4%) FERC Annual Formula Rate update, TYE 12/31/2014, effective 6/1/2015.

Appalachian Power Company Distribution - \$0.45M (4.8%)

APCo WV base rate case filing, TYE 12/31/2013, with cost projections through 12/31/2014, effective 2/1/2015.

Appalachian Power Company - Transmission - \$0.29M (3.1%)

Costs will be included in the PJM OATT annual formula rate filings (East Operating Companies OATT and East Transmission Companies OATT) effective the year the assets are projected to be placed in-service. Through PJM, these costs will be billed to the AEP LSE (East OPCOs) and wholesale customers in the AEP Zone. Jurisdictional OATT pass-through mechanisms are currently in place for 68% of the PJM annual transmission revenue requirement, including portions allocated to retail customers in OPCO, APCo VA, I&M MI, Kingsport and to all wholesale customers. Costs will continue to be recovered through base rate cases in I&M IN, KPCo, APCO WV, WPCo and other jurisdictions if pass-throughs are not approved.

Indiana Michigan Power Company – \$0.44M (4.7%)

> \$0.29M (65%) I&M IN base rate case filing, TYE 12/31/2012, with cost projections through 12/31/2014, effective 6/1/2014 (using State of IN Minimum Filing Requirements).

> \$0.06M (15%) I&M MI base rate case filing, TYE 12/31/2012 with projections through 12/31/2014, effective 2/1/2014 (interim rates if no settlement)

> \$0.09M (20%) FERC Annual Formula Rate update, TYE 12/31/2014, effective 6/1/2015.

Kentucky Power Company – \$0.13M (1.4%)

> \$0.12M (99%) base rate case filing, TYE TBD, effective TBD.

> \$0.01M (1%) FERC Annual Formula Rate update, TYE 12/31/2014, effective 6/1/2015

#### Ohio Corporate Separation

Ohio Power Company – \$6.35M (68.0%)

> \$6.10M (96%) Upon approval from State and Federal regulatory authorities, Ohio Power Company's generation fleet will transition into a competitive market. Currently, base generation revenues authorized by the PUCO (approved in August 2012 Modified ESP II) are not cost-of-service based, so there is no incremental cost recovery mechanism for new capital investments. As such, new investment carrying costs are deemed a cost of business offsetting ESP authorized revenues.

> \$0.25M (4%) Allocated to WPCo and recovered in current demand charge effective 1/1/10

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation **Version 1**

**Project :** ITGEN1250 Generation Corrective Preventative Action Application Replacement  
 1 Riverside Plaza, Columbus, OH

**Description:** With the business objective to drive continuous improvement, mitigate risk and avoid cost, streamline business processes, ensure sustainable conformance to standards and improve productivity, Generation has had a Corrective / Preventative / Nonconformance / Lessons learned program based on ISO 9001. To support this effort Generation used two applications: Corrective Preventative Action Request (CPAR) and GAPs. These two applications will be replaced with a new solution based on RSA Archer.

The CPAR and GAPs problem statement:

- CPAR application is based on Lotus Notes technology which is to be retired
- Applications modifications not easily performed to keep them current
- Applications have very basic automation for notifications and approvals
- Applications have minimal action item functionality needed to assure assignment completions
- Applications do not support basic dash boards and have minimal metrics that can be used to track activity
- Applications contain very basic search and data manipulation functions
- Applications use primarily text fields which results in hit or miss categorization and classification of events and minimal search / sort capability
- Application workflows must be driven by users and reports must be requested
- GAPs application must be modified for Ohio Generation Corporate Separation

Project Benefits

Total CPAR Type 2 Benefits - \$636,000 per year in productivity and cost avoidance

Total GAPS Type 2 Benefits - \$250,000 per year in productivity and cost avoidance

Authorization Amount:	Previously Approved Amount	This Submission	Total Amount to be Authorized
<b>Total</b>	\$ -	\$ 440,200	\$ 440,200

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 440,200	\$ -	\$ -	\$ 440,200
<b>Total to be Authorized</b>	\$ -	\$ 440,200	\$ -	\$ -	\$ 440,200
<b>Net AEP Cash Flow</b>	\$ -	\$ 440,200	\$ -	\$ -	\$ 440,200
<b>Associated O&amp;M</b>	\$ -	\$ 29,520	\$ -	\$ -	\$ 29,520

**Start Date:** 5/1/2013      **Completion Date:** 12/31/2013      **In Service Date:** 10/31/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:** Included in IRC Presentation  Yes  Project Funded  No  Offset Source  Generation

*Requested future year funds are included in the last official Forecast.*

**Approved By:** \_\_\_\_\_ **Approved On:** \_\_\_\_\_

## Capital Improvement Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	440,200	-	440,200
<b>Total</b>	<b>\$ 440,200</b>	<b>\$ -</b>	<b>\$ 440,200</b>

### 2013 Direct Cost Funding

### Offset Source and Amount

In Forecast	\$ 347,200	<i>(If offset, provide Opco, BU, Project ID, \$'s)</i>
Offset	\$ -	

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	
amt ≤ \$ 10m	VP Fleet Operations	Daniel Lee	See electronic approval attached	
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		

### Project Contacts

Contact	Name	Telephone
Project Manager	Dan Kohler	200-1619
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

The proposed solution will provide the following benefits.

The CPAR replacement benefits is based on Engineering, Project & Field Services' average annual major project capital spend through 2015 of \$667 Million:

- Improved productivity in data mining of Lessons Learned, including project initiation reviews
- Process improvement to the current Nonconformity Process
- Presently Non-conformances (NCR) generated and closed in multiple systems managed by AEP and/or AE/Constructor
- New solution will provide common platform for all NCR's and increase productivity by reducing duplicate work.
- Cost Avoidance related to current Nonconformity Process
- Due to the multiple Non-conformance systems, swift resolution does not always occur and results in rework or extra cost in expediting. Recognizing trends and extent of conditions in the existing CPAR application is difficult.
- Annual process/quality improvement, Human Performance Improvement (HPI) error reduction, and increased labor efficiency equal to 1% of annual project spend yields a \$667K benefit. An internal study identified approximately \$636K benefit vis-à-vis reduction of repeat events.
- Total CPAR Type 2 Benefits - \$636,000 per year in productivity and cost avoidance

For GAPS replacement

- Improved productivity in event trending  
Developing event trends in the existing GAPS application begins with a manual import of data from GAPS into Excel which is time consuming, has minimal optionality, and only serves as a data snapshot at the time the data was extracted. As a result, meaningful trends are rarely found. Earlier recognition of event trends will enable generating units to pro-actively address potential events before they occur which will reduce the number of forced unit outages and minimize damage to impacted equipment. For example we have had several hydraulic leaks across the system that have caused forced unit outages. The source of these events has been addressed but if this trend had been recognized earlier, several forced unit outages could have been avoided. Based on the avoidance of 1 forced outage every two years at an average cost of around \$100,000 per outage, the cost avoidance is \$50,000 per year.
- Elimination of repeat occurrences  
Addressing the causes of events at plants to eliminate repeat occurrences is an important part of GAPS. The present system does not have a good system to generate action items and track their completion. The new system will do this and be able to keep a running total of action items not completed. There is an estimated minimum value of \$50,000 per year in rework avoidance including parts and labor.
- Communication of process improvements  
The communication of events and their cause analysis that occur among similar fleet units will reduce the total number of events by providing each plant the knowledge to pro-actively address the causes leading up to the event. In order for this to happen, each event, that has potential impacts at other plants, must be communicated with recommendations as to avoid the event and an acknowledgement that action has been taken must be received. There will be a two fold payback here. The first will be an avoidance of forced outages assuming 1 per year at \$100,000 per outage, the cost avoidance is \$100,000 per year and the second will be pro-actively addressing the causes of events that will minimize costs related with equipment repair. This will equate to around \$50,000 per year. Total cost avoidance will be around \$150,000 per year.
- Avoided cost of modifying the existing GAPS application to accommodate Ohio Generation Corporate Separation  
Estimate for GAPS modifications is \$30,000
- Total GAPS Type 2 Benefits - \$250,000 per year in productivity and cost avoidance

## Capital Improvement Approval Requisition

### Project Justification (Continued)

Other intangible benefits include:

- Consolidates user experience to one easy to use application
- Common data (picklists) used across Generation Engineering, Projects & Construction, Field Services and Operations
- Consolidates Generation Corrective, Preventative, Nonconformity and Lessons learned into one application
- Dashboards / Reporting can show trends across Generation
- Retires CPAR and GAPs applications

### Other Alternatives Considered

The RSA Archer solution was selected with a cross functional team using the software selection process including a Request for Proposal (RFP). Other vendors considered were: Ventyx, Intellex, DevonWay, and CMO Compliance. Of course, Generation could continue to use their existing applications. This alternative will not solve the problem statement nor provide the additional benefits outlined in the business case.

### Conclusion

Based on the project justification and the other alternative considered, Generation should move forward with this application replacement of CPAR and GAPs with RSA Archer.

### Associated/Future Projects

Other Business units have expressed interest in the RSA Archer solution to address their corrective / preventative action programs in the future. These Business units include Transmission and Environmental, Safety & Health and would be separate projects (Capital Improvements) in the future.

### Financial Information

<i><b>Total Capital Costs</b></i>	<i><b>Total Cost</b></i>			<i><b>Direct Costs</b></i>		
	<i><b>IT</b></i>	<i><b>BU</b></i>	<i><b>Total</b></i>	<i><b>IT</b></i>	<i><b>BU</b></i>	<i><b>Total</b></i>
Internal Labor	100,000	100,000	200,000	100,000	100,000	200,000
Outside Services - Labor	145,000	-	145,000	145,000	-	145,000
Outside Services Software	-	-	-	-	-	-
Material	-	-	-	-	-	-
Other Cost Category	1,100	1,100	2,200	1,100	1,100	2,200
Fleet	-	-	-	-	-	-
Fringes/Incentives	46,500	46,500	93,000	-	-	-
AFUDC	-	-	-	-	-	-
<i><b>Total Capital Costs</b></i>	292,600	147,600	440,200	246,100	101,100	347,200

## Capital Improvement Approval Requisition

**Company:** American Electric Power Service Corporation

**Version 1**

**Project :** ITGEN1252 Generation Monitoring Diagnostics Software  
 1 Riverside Plaza, Columbus, Ohio

**Description:** This project will purchase and implement Advanced Pattern Recognition (APR) Software which can detect equipment operation anomalies to reduce failures and minimize the potential for resulting catastrophic events. At present, our generating units do not have a real-time continuous monitoring system in place that can detect long term equipment degradation. Based on this situation, the business imperative is:

- Plant equipment is generally placed in-service and monitored periodically by plant operators on a scheduled basis (monthly or quarterly) by the predictive maintenance analyst in an effort to catch equipment degradation before it causes the failure of the equipment.
- The operating characteristics of plant equipment within design basis performance metrics could change before a plant operator or the predictive maintenance analyst could detect an anomaly.
- Sooner or later, even properly maintained equipment will fail and as the service life of generating units increases, the frequency of failure would also be expected to grow.
- The timing of equipment failures can have a significant impact on unit/plant/ availability and capacity
- Unit/equipment outages caused by such untimely failures can result in longer outages due to possible delays in acquiring parts and labor which can result in higher costs
- Distributed Control System management is progressing toward a more effective alarm system and the APR software will support this migration by detection of abnormalities in equipment operating characteristics in real-time.

<b>Authorization Amount:</b>		<b>Previously Approved Amount</b>	<b>This Submission</b>	<b>Total Amount to be Authorized</b>
		-	\$ 1,348,050	\$ 1,348,050

Cash Flow:	Prior Years	2013	2014	Future Years	Total
<b>Capital</b>	\$ -	\$ 1,348,050	\$ -	\$ -	\$ 1,348,050
<b>Total to be Authorized</b>	\$ -	\$ 1,348,050	\$ -	\$ -	\$ 1,348,050
<b>Associated O&amp;M</b>	\$ -	\$ 2,952	\$ -	\$ -	\$ 2,952

**Start Date:** 6/10/2013      **Completion Date:** 11/30/2013      **In Service Date:** 8/9/2013

**Regulatory Cost Recovery:** Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each jurisdiction.

**Funding:**      **Included in IRC Presentation**  Yes      **Project Funded**  Yes      **Offset Source**

*Requested future year funds are included in the last official Forecast.*

**Approved By:**

**Approved On:**

## Capital Improvement Approval Requisition

### Expenditure to be Authorized (fully loaded)

	Capital	Removal	Total
Previously Approved Amount	-	-	-
This Submission	1,348,050	-	1,348,050
<b>Total</b>	<b>\$ 1,348,050</b>	<b>\$ -</b>	<b>\$ 1,348,050</b>

### 2013 Direct Cost Funding

### Offset Source and Amount

In Forecast	\$ 1,317,987	<i>(If offset, provide Opco, BU, Project ID, \$'s)</i>
Offset	\$ -	

Requested future year funds are included in the last official Forecast.

### Required Signatures

Authorization Limits	Title	Approver	Signature	Date
amt ≤ \$ 10m	VP and CIO	Alberto Ruocco	See electronic approval attached	
amt ≤ \$ 10m	VP Fleet Operations	Daniel Lee	See electronic approval attached	
CP&B Review	Manager, Capital and Lease Improvements	Lynch, D.		

### Project Contacts

Contact	Name	Telephone
Project Manager	John Grimm	200-2751
Requisition Detail Provider	Stan Bundy	200-3924

## Capital Improvement Approval Requisition

### Project Justification

This project will support the creation of a Generation Fleet-wide Monitoring and Diagnostic Center. Advanced Pattern Recognition (APR) Software can detect equipment operating anomalies that could reduce equipment failures and minimize catastrophic events through continuous real-time monitoring of equipment data.

APR software is used to create analytical models of power plant equipment that predicts equipment normal operation based on historical data taken from the plants existing PI historian. When the real-time data varies from the predicted value, the software will alarm indicating an anomaly. This allows for much earlier detection of possible equipment degradation.

InStep PRiSM software was selected via a request for proposal process and integrates with the plants existing Plant Information (PI) historian. InStep customers include Duke/Progress Energy, Southern Company, Tennessee Valley Authority (TVA), WE Energies, EDF Energy, Eskom, Florida Power and Light (FPL), Georgia System Operations Corporation (GSOC), and National Grid UK. InStep PRiSM is currently the industry leader monitoring over 140,000 MW of generation capacity.

Monitoring & Diagnostic Centers are being effectively utilized to achieve the stated goals at other utilities. Duke / Progress Energy provided AEP with the following representative benefit examples resulting from using the PRiSM APR software at their Monitoring & Diagnostic center (estimated avoided costs include lost generation and equipment repair based on a catastrophic failure):

#### Mayo Lake Plant – Low Pressure Turbine

- Unit was started after an outage
- Vibration step change occurred on LP turbine that was well below alarm levels
- Engineering and plant were notified
- Vibration data collected and unit removed for inspection
- Bolts on lower half of flow sleeve broke and sleeve contacted L-0 blades
- Minor damage was found and L-0 blades repaired
- Avoided blade failure and associated damage to multiple stages of blades, packing, and diaphragms
- Estimated avoided cost - \$4.1M

#### Darlington Combined Cycle Plant (Gas Turbine)

- Blade Path temperature spread increased due to early progression of a transition piece failure
- APR models have detected 3 additional failures on other units prior to turbine damage
- Detection prevented piece from liberating and damaging turbine (a unit at an unmonitored site had extensive damage to the turbine with the same failure)
- Avoided Cost: - \$1.5M

Detecting equipment degradation as it occurs allows for:

- Lower repair costs and improved equipment reliability
- Maximizing generation output by catching equipment operating anomalies before a major failure can occur thus reducing Forced Outages
- Improved operational excellence through knowledge capture and information sharing as allowed throughout the AEP fleet



## Capital Improvement Approval Requisition

### Other Alternatives Considered

The InStep PRISM solution was selected by a cross-functional team using the software selection process that included a Request for Proposal (RFP). Other vendors considered were: Scientech, General Electric Smart Signal, Cassantech, and Black & Veatch. The default alternative for Generation would be to "do nothing," but this alternative does not provide a solution for the problem statement nor the benefits of establishing a Monitoring & Diagnostic Center.

### Conclusion

Based on the project justification and the other alternative considered, Generation should move forward with this project.

### Associated/Future Projects

None

### Financial Information

<i>Total Capital Costs</i>	<i>Total Cost</i>			<i>Direct Costs</i>		
	<i>IT</i>	<i>BU</i>	<i>Total</i>	<i>IT</i>	<i>BU</i>	<i>Total</i>
Internal Labor	28,650	36,000	64,650	28,650	36,000	64,650
Outside Services - Labor	25,000	-	25,000	25,000	-	25,000
Outside Services Software	-	1,227,625	1,227,625	-	1,227,625	1,227,625
Material	-	-	-	-	-	-
Other Cost Category	316	396	712	316	396	712
Fleet	-	-	-	-	-	-
Fringes/Incentives	13,323	16,740	30,063	-	-	-
AFUDC	-	-	-	-	-	-
<b><i>Total Capital Costs</i></b>	<b>67,289</b>	<b>1,280,761</b>	<b>1,348,050</b>	<b>53,966</b>	<b>1,264,021</b>	<b>1,317,987</b>

# **Advanced Pattern Recognition Software for Monitoring and Diagnostics**

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## **Business Case**

April 26, 2013

# Topics

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- **Business imperative**
- **Solution (Process/People/Technology)**
- **Monitoring & Diagnostic Center Goals**
- **Quantitative Value/Costs**
- **Qualitative Value**
- **Schedule**
- **Appendix**

# Business Imperative

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- At present, our generating units have no real time, continuous monitoring system in place that can detect long term equipment degradation.
- Plant equipment is generally placed in service and monitored periodically by plant operators or on a scheduled basis (monthly or quarterly) by the predictive maintenance group in an effort to catch equipment degradation before it causes the failure of the equipment.
- The condition of plant equipment could change before the plant operator or PDM group would detect an issue.

# Business Imperative

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- Sooner or later “mechanical equipment fails” and as our generating units continue to age the frequency of equipment failure will increase.
- Timing of the equipment failures can have a significant impact on plant/fleet availability and capacity
- Unit/equipment outages caused by untimely failures can lead to longer down time with possible delays in acquiring parts and labor resulting in higher costs

# Business Imperative

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- Our plant operators are younger and less experience than in the past. Average years of service is 22 years, with  $\frac{1}{4}$  of the control room operators having 10 years or less of service.
- Normal attrition going forward will further reduce the amount of experienced operators at our plants
- DCS system management is progressing toward a more effective alarm system and the APR software will support this migration by early detection of equipment abnormalities

# Solution

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- Creation of the Fleetwide Monitoring & Diagnostic Center staffed with full time analysts/modelers
- Purchase Advanced Pattern Recognition (APR) Software to detect equipment anomalies that could minimize equipment failures and catastrophic events.
- Resulting in continuous monitoring of real time equipment data

## Solution – APR Software

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- APR software is used to create analytical models of power plant equipment that predicts equipment normal operation based on historical data. When the real time data varies from the predicted value, the software will alarm indicating an anomaly. This allows for much earlier detection of possible equipment degradation.



# Solution

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- The preferred APR software is InStep PRiSM which integrates with the plants existing PI historian.
- InStep customers include Duke/Progress Energy, Southern Company, TVA, WE Energies, EDF Energy, Eskom, FPL, Georgia System Operations Corporation (GSOC), National Grid UK.
- PRiSM is currently monitoring over 140,000 MW of generation capacity

# Monitoring & Diagnostic Center Goals

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- Improve Equipment Reliability and reduce cost of unexpected equipment repairs and unit outages.
- Enhanced generation revenue by improving Forced Outage Rates.
- Improve employee safety by reducing equipment hazards.
- Improve long-term asset management by monitoring equipment more effectively.
- Improve operations excellence through knowledge capture and information sharing across the fleet.
- Improve instrument reliability and unit performance by identifying instrument problems

# Quantitative Value/Costs

## Duke/Progress Energy Examples

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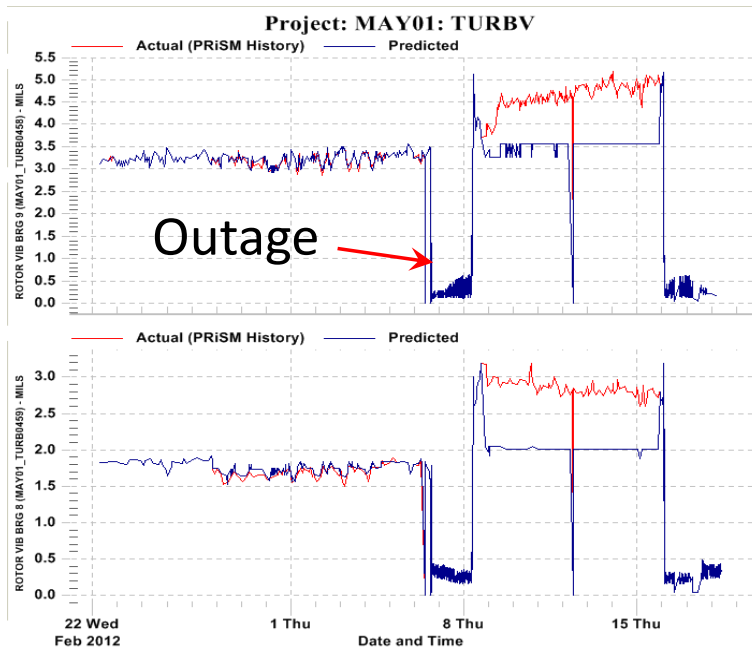
- These examples are actual finds made with PRiSM APR software at their M&D center.
- Avoided costs include estimated lost generation and equipment repair based on a catastrophic failure.

# Quantitative Value/Costs

## Mayo Lake Plant Low Pressure Turbine

- Unit was started after an outage
- Vibration step change occurred on LP turbine that was well below alarm levels
- Engineering and plant were notified
- Vibration data collected and unit removed for inspection
- Bolts on lower half of flow sleeve broke and sleeve contacted L-0 blades

- Minor damage was found and L-0 blades repaired
- Avoided costs due to blade failure and associated damage to multiple stages of blades, packing, and diaphragms.
- Estimated avoided cost - \$4.1M

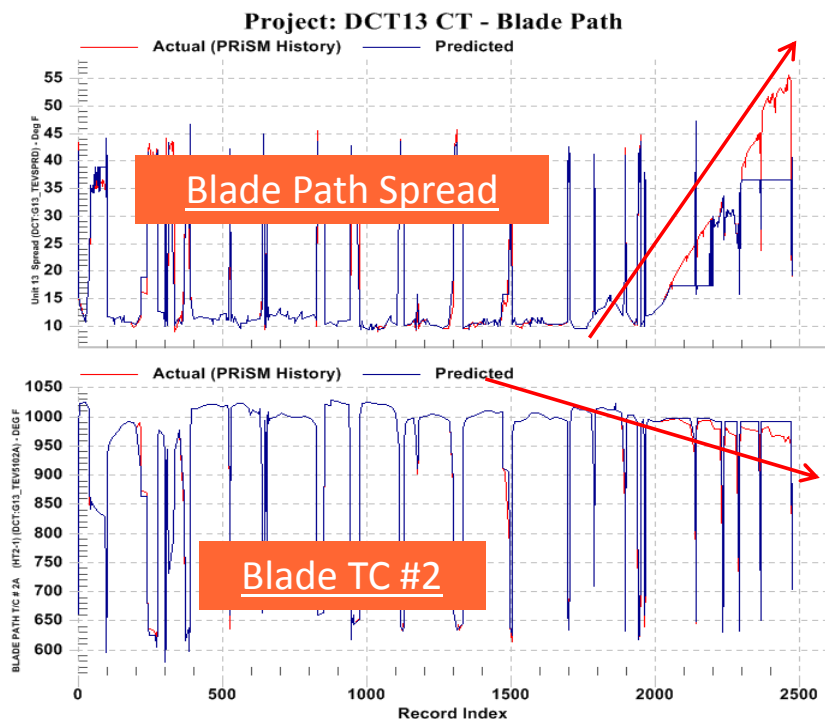


# Quantitative Value/Costs

## Darlington Combined Cycle Plant (Gas Turbine)

- Blade Path temperature spread increased due to early progression of a transition piece failure
- APR models detected 3 failures prior to damaging the turbine

[Avoided Cost: Had the piece liberated and damaged turbine - \\$1.5M](#) (a unit at an unmonitored site had extensive damage to the turbine with the same failure)



# Qualitative Value

## AEP Events

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- Since 2007 - 46 Howden ID Fan failures occurred.
  - APR models and experienced analysts could have caught nearly 1/3 (15) of those failures resulting in fewer forced outages and significant cost savings.

# Qualitative Value

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Detecting equipment degradation earlier allows for:

- ✓ Improved equipment reliability
- ✓ Savings by reducing the replacement parts required for repair
- ✓ Enhanced generation revenue by catching equipment issues before major failure occurs and improving Forced Outage Rates.
- ✓ Improved employee safety by reducing equipment hazards
- ✓ Improved operations excellence through knowledge capture and information sharing through the fleet

# Summary

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- Monitoring & Diagnostic Centers are being effectively utilized to achieve the stated goals at other utilities
- Our competition is demonstrating that APR Software and M&D Centers staffed with experienced analysts results in better equipment reliability, less forced outages, substantial cost savings and increased revenues.

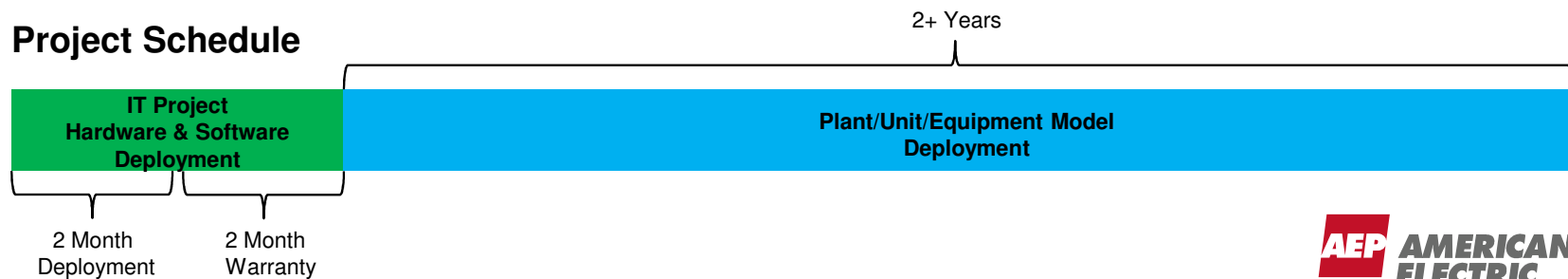


# Project Cost & Schedule

High Level Estimate	2013
<b>Capital</b>	
<b>IT</b>	
Infrastructure	\$ 4,000
Labor	\$ 42,512
Software	\$ 1,150,000
Contingency	\$ 7,488
Total IT	\$ 1,204,000
<b>Generation</b>	
Labor	\$ 32,000
Contingency	\$ 4,000
Total Gen	\$ 36,000
Total Capital	\$ 1,240,000
<b>O&amp;M</b>	
Data Migration	\$ 2,000
Total O&M for Project	\$ 2,000

	2013	2014	2015	2016	2017	2018
<i>Type 1 Benefits</i>						
Increase in Revenue						
Decrease in Expense						
<i>Costs (Direct Capital)</i>						
Cost to Achieve	(\$1,240,000)					
<i>Costs (O&amp;M)</i>						
Hardware/ Training / Data Migration	(\$2,000)					
Application Support		(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)
Software Maintenance		(\$212,750)	(\$219,558)	(\$226,584)	(\$233,835)	(\$241,317)
Infrastructure Hosting (Lease)	(\$2,643)	(\$2,643)	(\$2,643)	(\$2,643)	(\$2,643)	(\$2,643)
<b>Total</b>	<b>(\$1,244,643)</b>	<b>(\$225,393)</b>	<b>(\$232,201)</b>	<b>(\$239,227)</b>	<b>(\$246,478)</b>	<b>(\$253,960)</b>
	NPV:	(\$2,012,593)	8.5%	Discount rate		
	TCO:	(\$2,441,902)				

## Project Schedule



## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITSSV1351 - Enterprise Documentum Custom Client Capability -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	EMC Documentum has been in use at AEP for a number of years and is the software platform for content and document management. This purchase of Documentum custom client user licenses will align AEP with actual usage and expand the Documentum platform to the enterprise. These new licenses will allow deployment of Documentum in new business areas such as Utilities, Transmission, Corporate and Shared Services. This purchase is for 19,127 custom client Documentum user licenses, an additional 3,127 platform licenses to bring our platform count up to 19,127 and 100 D2 client licenses. This project is a software license purchase.																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$1,700,000</td> <td>\$1,700,000</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$1,700,000</b></td> <td><b>\$1,700,000</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$1,700,000	\$1,700,000	<b>Total</b>		<b>\$0</b>	<b>\$1,700,000</b>	<b>\$1,700,000</b>																											
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Associated O&M	\$0	\$170,000	\$0	\$0	\$170,000																																							
<b>Project Dates:</b>	<b>Start Date :</b> 08/18/2014 <b>In Service Date :</b> 09/30/2014 <b>Completion Date:</b> 12/31/2014																																											
<b>Regulatory Cost Recovery:</b>	Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> No																																										
<b>Approved By :</b> Alberto G Ruocco	<b>Approved On :</b> 08/12/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$1,700,000	\$0	\$0	\$1,700,000
	<b>Total</b>	<b>\$0</b>	<b>\$1,700,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,700,000</b>
<b>Required Signatures:</b>	<b>Status</b>		<b>Name</b>		<b>Date</b>	
	Approved		Stanley J Bundy		08/07/2014	
	Approved		Jeffrey P White		08/07/2014	
	Approved		Dennis T Daugherty		08/08/2014	
	Approved		Michael A Rozsa		08/08/2014	
	Approved		Alberto G Ruocco		08/11/2014	
	Approved		Randolph J Ware		08/12/2014	
<b>Project Contacts:</b>	<b>Type</b>		<b>Name</b>			
	Detail Provider		GRIMM,JOHN E			
	Project Manager		GRIMM,JOHN E			

## Capital Improvement Approval Requisition

### Additional Information

<b>Project Justification:</b>	<p>AEP has been pursuing an Enterprise Content Management plan for several years and the foundation of this strategy has already been put into place as we have built an enterprise application platform. This strategy will provide the following benefits:</p> <ul style="list-style-type: none"> <li>Reduce risks and costs associated with litigation</li> <li>Reduce operating costs as employees can more effectively search and access information</li> <li>Information currently contained in silo operations becomes more accessible and visible (knowledge sharing)</li> <li>Provide for consistent approach to business processes and data governance</li> <li>Provide enterprise platform for automated workflow to improve and accelerate business processes and decision making</li> <li>Content managed from time of creation through active use to final archival and destruction</li> <li>Reduces physical file cabinets and shelves for hard copy documents</li> <li>Reduces boxes stored in physical record storage and associated storage cost.</li> </ul>
<b>Other Alternatives Considered:</b>	<p>While there are other document management tools being used at AEP, EMC Documentum is AEP's Enterprise Content Management product of choice due to factors such as existing product penetration level, current technical expertise and staffing around the product, and business unit satisfaction and support. Only the vendor of Documentum, EMC, can offer AEP the licenses and support in one cost effective package that builds upon our existing license and support agreements, a sole source option.</p>
<b>Conclusion:</b>	<p>AEP will procure software licensing to enable new business units such as Transmission, Corporate and Shared Services to move to the AEP standard for document management, EMC Documentum. This purchase of Documentum custom client user licenses will align AEP with actual usage.</p>



**American Electric Power**  
**IT Project Initiation**  
**14-0525 ESH LIMS Titan Upgrade**

**Revision History**

<i>Date</i>	<i>Version</i>	<i>Description</i>	<i>Author</i>
12/05/2014	1.0	Initial Draft	John E Grimm
12/15/2014	1.1	Updated estimates	John E Grimm

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# 1 PROJECT DEFINITION

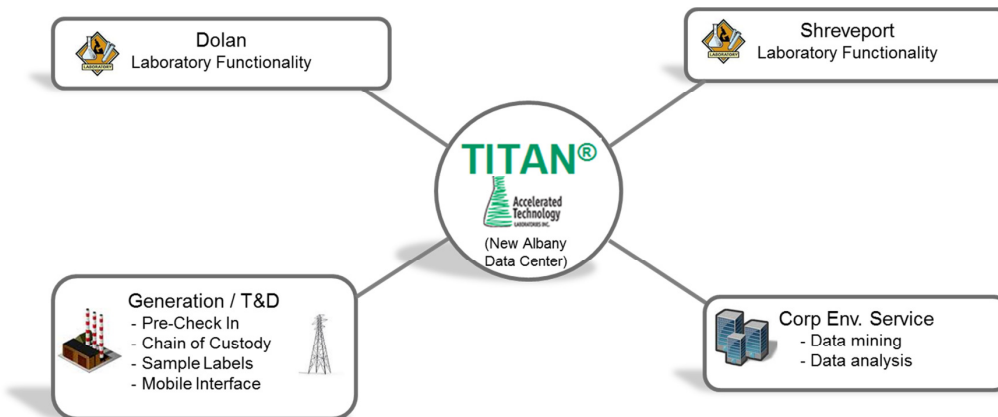
## 1.1 BUSINESS PROBLEM/OPPORTUNITY

AEP's Environmental Laboratories (Dolan and Shreveport) are required to have National Environmental Laboratory Accreditation Conference (NECAC) accreditation to submit data to the United States Environmental Protection Agency (US EPA). In 2011, Dolan Environmental Laboratory implemented a new LIMS (Laboratory Information Management System) based on Sample Master\*. After the Sample Master deployment, Dolan Environmental Laboratory had findings from a NELAC audit that required remediation. While manual work-arounds have been implemented, a long term sustainable solution is required to comply with audit findings.

The Shreveport Environmental Laboratory is currently using a MS Access in-house developed application which was out of scope in the original Sample Master Capital Improvement (CI). With the implementation of an Enterprise LIMS, Shreveport Environmental Laboratory can migrate to this new solution.

\* Vendor is Accelerated Technology Laboratories

## 1.2 PROJECT SCOPE



Purchase and configure Titan®, an external vendor-developed Lab Information Management System (LIMS) to be implemented company wide.

Scope of the implementation:

- Upgrade Dolan Laboratory's Sample Master LIMS
- Replace Shreveport Laboratory's current MS Access LIMS
- Track samples back to the bottle when the analysis is completed, required for lab accreditation
- Implement the following LIMS functionality: electronic Chain of Custody forms, sample barcoding, sample pre-check-in, mobile data collection and expand Industrial Hygiene data reporting

### 1.3 FUNCTIONALITY REQUESTED

The new Titan LIMS software provides the following features:

- Advanced Inventory Management
- Asset Management
- Business Management
- Change of Custody
- Corrective/Preventative Action (CAPA)
- Enhanced Discharge Monitoring Report (DMR)
- Ingredient/Formulation Trace-back
- Integrated Storage/Freezer Mgt.
- Pre-check-In of Samples
- Project Management
- Report Designer
- Sample Check-In Bar Coding
- Workflow Designer
- Workflows

The new detailed functionality in Titan includes:

- Samples can be tracked back to the bottle when the analysis is completed, require for Lab accreditation
- Chemical Inventory in Titan® is much more robust.
- Perform the same “as received/dry” calculations as Sample Master® and both can be placed on the report for the same result
- Same Sample can be run with different methods
- Tests can be reported in different units on the same sample/aliquot
- Titan® allows for aliquots to be removed from a sample in any order
- Titan® utilizes a user modifiable XML based parser/mapper which can also be used directly from the instruments
- Requestors have access to view primary status of results
- Simplify the lab sampling operations by reducing spreadsheet use, manual uploads and manual data entry.
- Testing can be performed on Discharge Monitoring Report (DMR) permit limits on completion of analysis to provide immediate notification for resampling as required
- Track minimum detection limit on lab equipment

### 1.4 OUT OF SCOPE (OPTIONAL)

There are no application integrations for this project.

### 1.5 CONSTRAINTS/ASSUMPTIONS

Environmental Services will fund software maintenance for Titan.  
Infrastructure will use VM servers and hosting will be at the New Albany Data Center (not Dolan Laboratory as today with Sample Master).



IT will provide base application support and software upgrade projects as planned and approved by governance. Environmental Services will provide system administration and will be able to make system configurations. Since Sample Master is supported by Environmental Services, this will be a new application for IT application support.

## 1.6 PROPOSAL TEAM

Name	Title	Role
John McManus	Executive Sponsor	To assure the project scope is clearly defined and is correct; to assess further phases of the project.
Paul Dober	Subject Matter Expert (SME)	Provide detailed requirements.
Sree Sunkum	IT Supply BSA	IT Business Systems Analyst
John Grimm	IT Demand BSA	IT Business Systems Analyst
Misty Lear	IT Solutions Engineer	Infrastructure Solutions Engineer

## 1.7 BUSINESS DATE DRIVERS (OPTIONAL)

This project will be implemented in three phases:

- Phase 1      Dolan Lab              Upgrade from Sample Master
- Phase 2      Shreveport Lab          Replacement of current application
- Phase 3      Facility\T&D RECs      Adding Mobile and Desktop Usage

The software will be purchased in 2014 and the project will be implemented in 2015-2016.

## 1.8 PROJECT URGENCY

High – required to remediate deficiencies in current NELAC Audit findings as current manual work-around is not sustainable long term.

## 2 BUSINESS CASE

### 2.1 OPTIONS

<b>Option</b>	<b>Strengths (Internal)</b>	<b>Weaknesses (Internal)</b>	<b>Opportunities (External)</b>	<b>Threats (External)</b>
<b>No Action</b>	Capital estimated for this project could be allocated to other projects.	Manual work arounds are not sustainable		
<b>Option 1 - &lt;Implement Titan Solution&gt; (Recommended)</b>	Remediates deficiencies in current NELAC Audit findings  Consolidation of Dolan and Shreveport into a single LIMS, and gaining additional functionality for improved process management and check-in time savings during peak season of sample processing  Titan is from the same vendor as Sample Master so user training should be minimal.		Expand usage into the field with mobile technology  Benefit from new functionality for pre-check-in at Dolan and Shreveport using barcoding and automated change of custody forms	
<b>Option 2 - &lt;Enhance Sample Master</b>		Modification to meet accreditation would require substantial time Investment is a temporary patch at best  Application maintenance for thick client not optimal		Performance unacceptable on Wide area network(WAN)

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Other vendor applications

- Other vendor applications were reviewed; Titan was evaluated to be the appropriate solution for meeting overall requirements of LIMS

## 2.2 COST (A BREAKDOWN OF THE PROJECT COSTS AND RELATED FINANCING OF THE RECOMMENDED OPTION)

### 2.2.1 FUNDING SOURCE

<b>Benefiting Location:</b>	1006	<b>Rationale:</b>	Generation non-nuclear. Generation has over 90 percent of the samples sent to the Labs
<b>Attribution Basis:</b>	48G	<b>Rationale:</b>	Based on MWH Generation and would include regulated and competitive generation.
<b>Project Costing Business Unit (PCBU):</b>	SHSVC – Shared Services		
<b>Billable Business Unit (BBU):</b>	Generation		
<b>Funding Sources:</b>	Environmental Services will fund their costs and IT will fund their cost as outlined in the cost estimate.		

### 2.2.2 CLASS 4 – HIGH LEVEL ESTIMATE

Class 4 – High Level Estimate	Lower Range (-30%)	Upper Range (+50%)
\$630,000	\$441,000	\$945,000

Funding Requested to Produce Class 2 – Commit Estimate	
\$330,000 (230,000 for software and 100,000 in labor)	230,000 is for software to be spent in 2014, so 25% of remaining part of the project

### Class 4 - Scoping Estimate

	2014	2015	2016	2017	2018	Total
<b>One Time Project Costs</b>						
<b>Capital</b>						
<i>IT</i>						
Internal Labor		\$ 21,825.00	\$ 9,875.00			\$ 31,700.00
External Labor						\$ -
Hardware						\$ -
Software	\$ 230,246.00	\$ 56,136.00	\$ 68,760.00			\$ 355,142.00
Other						\$ -
Professional Services		\$ 110,941.00				\$ 110,941.00
<b>Total IT</b>	<b>\$ 230,246.00</b>	<b>\$ 188,902.00</b>	<b>\$ 78,635.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 497,783.00</b>
<i>Infrastructure</i>						
Internal Labor		\$ 2,000.00				\$ 2,000.00
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ 2,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,000.00</b>
<i>Business Unit</i>						
Internal Labor		\$ 110,000.00	\$ 20,000.00			\$ 130,000.00
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Business Unit</b>	<b>\$ -</b>	<b>\$ 110,000.00</b>	<b>\$ 20,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 130,000.00</b>
<b>Total Capital</b>	<b>\$ 230,246.00</b>	<b>\$ 300,902.00</b>	<b>\$ 98,635.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 629,783.00</b>
<b>O&amp;M</b>						
<i>IT</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total IT</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Infrastructure</i>						
Internal Labor						\$ -
External Labor						\$ -
Hardware						\$ -
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Infrastructure</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<i>Business Unit</i>						
Internal Labor						\$ -
External Labor		\$ 5,500.00				\$ 5,500.00
Hardware		\$ 3,600.00				\$ 3,600.00
Software						\$ -
Other						\$ -
Professional Services						\$ -
<b>Total Business Unit</b>	<b>\$ -</b>	<b>\$ 9,100.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 9,100.00</b>
<b>Total O&amp;M</b>	<b>\$ -</b>	<b>\$ 9,100.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 9,100.00</b>
<b>Total One Time Project Costs</b>	<b>\$ 230,246.00</b>	<b>\$ 310,002.00</b>	<b>\$ 98,635.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 638,883.00</b>

### Recurring Costs

O&M							
<i>IT</i>							
Internal Labor							\$ -
External Labor							\$ -
Software							\$ -
Hardware							\$ -
Other							\$ -
<b>Total IT</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Infrastructure</i>							
Internal Labor		\$ 3,700.00	\$ 3,700.00	\$ 3,700.00	\$ 3,700.00	\$ 3,700.00	\$ 14,800.00
External Labor							\$ -
Software							\$ -
Hardware		\$ 5,100.00	\$ 5,100.00	\$ 5,100.00	\$ 5,100.00	\$ 5,100.00	\$ 20,400.00
Other							\$ -
<b>Total Infrastructure</b>	\$ -	\$ 8,800.00	\$ 8,800.00	\$ 8,800.00	\$ 8,800.00	\$ 8,800.00	\$ 35,200.00
<i>Business Unit</i>							
Internal Labor							\$ -
External Labor							\$ -
Software			\$ 12,750.00	\$ 12,750.00	\$ 12,750.00	\$ 12,750.00	\$ 38,250.00
Hardware							\$ -
Other							\$ -
<b>Total Business Unit</b>	\$ -	\$ -	\$ 12,750.00	\$ 12,750.00	\$ 12,750.00	\$ 12,750.00	\$ 38,250.00
<b>Total O&amp;M</b>	\$ -	\$ 8,800.00	\$ 21,550.00	\$ 21,550.00	\$ 21,550.00	\$ 21,550.00	\$ 73,450.00
<b>Total Recurring Costs</b>	\$ -	\$ 8,800.00	\$ 21,550.00	\$ 21,550.00	\$ 21,550.00	\$ 21,550.00	\$ 73,450.00
<b>Proposal Total</b>	\$ 230,246.00	\$ 318,802.00	\$ 120,185.00	\$ 21,550.00	\$ 21,550.00	\$ 21,550.00	\$ 712,333.00

## 2.3 BENEFITS (THE COST OF THE PROJECT COMPARED TO THE EXPECTED RETURNS)

### 2.3.1 QUANTITATIVE VALUE/COSTS

	2014	2015	2016	2017	2018
<b>Type 1 Benefits</b>					
Increased Revenue					
Decreased Expenses					
<b>Type 2 Benefits</b>					
Avoided Costs					
Opportunity Cost					
<b>Costs (Direct Capital)</b>					
Cost to Achieve	\$ (230,246.00)	\$ (300,902.00)	\$ (98,636.00)		
<b>Costs (O&amp;M)</b>					
		\$ (9,100.00)			
<b>Total</b>	<b>\$ (230,246.00)</b>	<b>\$ (310,002.00)</b>	<b>\$ (98,636.00)</b>	<b>\$ -</b>	<b>\$ -</b>

Net Present Value (NPV): \$ (552,764.06)

Discount Rate: 8.50%

### 2.3.2 QUALITATIVE VALUE

The major benefits of this project are to:

- The main business driver was generated from recent audit findings from the National Environmental Laboratory Accreditation Conference (NELAC)
- NELAC accreditation for Dolan and Shreveport labs is an EPA National Pollutant Discharge Elimination System (NPDES) permit requirement to allow the submittal of Discharge Monitoring Reports (DMR) parameter analyses. NPDES permits are issued to maintain water quality where facilities are discharging into rivers, streams and lakes
- Secondary drivers include consolidation of Dolan and Shreveport into a single LIMS, and gaining additional functionality for improved process management and check-in time savings during peak season of sample processing

## Capital Improvement Approval Requisition One Page Summary

<b>Company:</b>	American Electric Power Service Corporation	<b>Version: 1</b>																																										
<b>Project:</b>	ITCHR1371 - Environmental Laboratory Information Management System -																																											
<b>Location:</b>	1 Riverside Plaza, Columbus, Ohio																																											
<b>Description:</b>	<p>Purchase and configure Titan, an external vendor-developed Environmental Lab Information Management System (LIMS) to be implemented company wide.          Scope of the implementation:</p> <ul style="list-style-type: none"> <li>• Upgrade Dolan Laboratory's Sample Master LIMS</li> <li>• Replace Shreveport Laboratory's current MS Access LIMS</li> <li>• Track samples back to the bottle when the analysis is completed, required for lab accreditation</li> <li>• Implement the following LIMS functionality: electronic Chain of Custody forms, sample barcoding, sample pre-check-in, mobile data collection and expand Industrial Hygiene data reporting</li> <li>• Environmental groups in the following business units will benefit with the new functionality include Shared Services, Generation, T&amp;D, River and Rail Operations</li> </ul> <p>The main business driver was generated from recent audit findings from the National Environmental Laboratory Accreditation Conference (NELAC).</p> <ul style="list-style-type: none"> <li>• NELAC accreditation for Dolan and Shreveport labs is an Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit requirement to allow the submittal of Discharge Monitoring Reports (DMR) parameter analyses. NPDES permits are issued to maintain water quality where facilities are discharging into rivers, streams and lakes</li> <li>• Secondary drivers include consolidation of Dolan and Shreveport into a single LIMS, and gaining additional functionality for improved process management and check-in time savings during peak season of sample processing</li> </ul>																																											
<b>Authorization Amount:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;">Company</th> <th style="width: 20%;">Function</th> <th style="width: 15%;">Previously Approved Amount</th> <th style="width: 15%;">This Submission</th> <th style="width: 20%;">Total Amount to Be Authorized</th> </tr> </thead> <tbody> <tr> <td>AEPSC</td> <td>Application Sof</td> <td>\$0</td> <td>\$700,956</td> <td>\$700,956</td> </tr> <tr style="background-color: yellow;"> <td colspan="2"><b>Total</b></td> <td><b>\$0</b></td> <td><b>\$700,956</b></td> <td><b>\$700,956</b></td> </tr> </tbody> </table>		Company	Function	Previously Approved Amount	This Submission	Total Amount to Be Authorized	AEPSC	Application Sof	\$0	\$700,956	\$700,956	<b>Total</b>		<b>\$0</b>	<b>\$700,956</b>	<b>\$700,956</b>																											
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<b>Cash Flow:</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 15%;">Prior Years</th> <th style="width: 15%;">2014</th> <th style="width: 15%;">2015</th> <th style="width: 15%;">Future Years</th> <th style="width: 15%;">Total</th> </tr> </thead> <tbody> <tr> <td>Capital</td> <td>\$0</td> <td>\$230,246</td> <td>\$358,183</td> <td>\$112,527</td> <td>\$700,956</td> </tr> <tr> <td>Removal</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr style="background-color: yellow;"> <td><b>Total To Be Authorized</b></td> <td><b>\$0</b></td> <td><b>\$230,246</b></td> <td><b>\$358,183</b></td> <td><b>\$112,527</b></td> <td><b>\$700,956</b></td> </tr> <tr> <td>Less CIAC</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>Net AEP Cash Flow</td> <td>\$0</td> <td>\$230,246</td> <td>\$358,183</td> <td>\$112,527</td> <td>\$700,956</td> </tr> <tr> <td>Associated O&amp;M</td> <td>\$0</td> <td>\$0</td> <td>\$18,900</td> <td>\$66,300</td> <td>\$85,200</td> </tr> </tbody> </table>			Prior Years	2014	2015	Future Years	Total	Capital	\$0	\$230,246	\$358,183	\$112,527	\$700,956	Removal	\$0	\$0	\$0	\$0	\$0	<b>Total To Be Authorized</b>	<b>\$0</b>	<b>\$230,246</b>	<b>\$358,183</b>	<b>\$112,527</b>	<b>\$700,956</b>	Less CIAC	\$0	\$0	\$0	\$0	\$0	Net AEP Cash Flow	\$0	\$230,246	\$358,183	\$112,527	\$700,956	Associated O&M	\$0	\$0	\$18,900	\$66,300	\$85,200
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<b>Project Dates:</b>	<b>Start Date :</b> 12/22/2014 <b>In Service Date :</b> 04/30/2016 <b>Completion Date:</b> 06/30/2016																																											
<b>Regulatory Cost Recovery:</b>	<u>AEP System</u> -- \$0.7M (100%)  Allocated costs will be recovered in the next base rate proceeding or through other regulatory mechanisms in each regulated jurisdiction.																																											
<b>Funding:</b>	<b>Included in IRC Presentation :</b> Yes	<b>Project Funded :</b> Yes																																										
<b>Approved By :</b>	<b>Approved On :</b> 12/04/2014																																											

## Capital Improvement Approval Requisition

### Funding and Approval

<b>Direct Cost Funding:</b>		<b>Prior Years</b>	<b>2014</b>	<b>2015</b>	<b>Future Years</b>	<b>Total</b>
	In Forecast \$	\$0	\$0	\$0	\$0	\$0
	Offsets Required	\$0	\$230,246	\$300,902	\$98,635	\$629,783
	<b>Total</b>	<b>\$0</b>	<b>\$230,246</b>	<b>\$300,902</b>	<b>\$98,635</b>	<b>\$629,783</b>

<b>Required Signatures:</b>		<b>Status</b>	<b>Name</b>	<b>Date</b>
		Approved	Stanley J Bundy	12/04/2014
		Approved	Jeffrey P White	12/04/2014
		Approved	Michael A Rozsa	12/04/2014
		Approved	John M McManus	12/04/2014

<b>Project Contacts:</b>		<b>Type</b>	<b>Name</b>
		Detail Provider	GRIMM,JOHN E
		Project Manager	GRIMM,JOHN E



## Capital Improvement Approval Requisition

### Additional Information

<p><b>Project Justification:</b></p>	<p>The LIMS applications utilized at Dolan and Shreveport Labs are a critical component in providing timely reporting to support AEP's compliance requirements. Implementing Titan will result in opportunities to simplify and strengthen the ability to meet requirements placed by accrediting bodies. Titan is a true enterprise application that has the capability to grown with the large user base planned for a companywide implementation. There are many new features that will aid in processing the ever increasing sample load and provide tools for tracking compliance requirements at the time of completion of the results.</p> <p>New Detailed Functionality:</p> <ul style="list-style-type: none"> <li>• Samples can be tracked back to the bottle when the analysis is completed; required for Lab accreditation</li> <li>• Chemical Inventory in Titan is much more robust</li> <li>• Perform the same "as received/dry" calculations as Sample Master and both can be placed on the report for the same result</li> <li>• Same Sample can be run with different methods</li> <li>• Tests can be reported in different units on the same sample/aliquot</li> <li>• Titan allows for aliquots to be removed from a sample in any order</li> <li>• Titan utilizes a user modifiable XML based parser/mapper which can also be used directly from the instruments</li> <li>• Requestors have access to view primary status of results</li> <li>• Simplify the lab sampling operations by reducing spreadsheet use, manual uploads and manual data entry.</li> <li>• Testing can be performed on Discharge Monitoring Report (DMR) permit limits on completion of analysis to provide immediate notification for resampling as required</li> <li>• Track minimum detection limit on lab equipment</li> </ul>
<p><b>Other Alternatives Considered:</b></p>	<p>Other alternatives considered include:</p> <p>Sample Master Option</p> <ul style="list-style-type: none"> <li>• Modification to meet accreditation would require substantial time Investment is a temporary patch at best</li> <li>• Performance unacceptable on Wide Area Network(WAN)</li> <li>• Application maintenance for thick client not optimal</li> <li>• Titan was not available during the Sample Master implementation</li> </ul> <p>Other vendor applications</p> <ul style="list-style-type: none"> <li>• Other vendor applications were reviewed; Titan was evaluated to be the appropriate solution for meeting overall requirements of LIMS</li> </ul>
<p><b>Conclusion:</b></p>	<p>Titan is an enterprise application for multiple laboratories that provides compliance requirements to meet NELAC certification.</p> <p>With the many additional features that follow closely to the planned roadmap for LIMS at AEP benefits can be obtained companywide.</p>