



Department of Veterans Affairs

Contract No. VA101F-13-D-0013

Task No. VA101F-15-J-1043

FY 2015 VISN 16

Facility Condition Assessment

Final Report (Bldg 1 Electrical Portion ONLY)

Shreveport, LA

February 19, 2016



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In association with:

**KJWW Engineering Consultants
Moss Construction Cost Management
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FCA - Basic FCA Report (Without Pendings)

667 - Shreveport							VISN 16			
Building 1	Year Built	Last Renov	Floors	FCA GSF			Current Function	Main Hospital		
	1950	2003	14	537,361			Proposed Function	Main Hospital		
Details										
Architectural	Rec No	Seq No	Condition	Useful Life	FCA Risk	Remain Life	Correction \$	Description		
Roof	282651	5	D	20	3	exceeds	\$1	10N roof has developed leaks. * 2015 FCA: this is a duplicate record. * Note to Station: Upon completion of associated projects, this record needs to be updated.		
Roof	282655	8	D	20	3	exceeds	\$7,234	9W: replace exterior expansion joint.		
Roof	282656	9	D	20	3	exceeds	\$607,457	* 2 Annex: Replace roof. * 1N: Replace roof. * Loading Dock Roof: roof slopes the wrong way, water doesn't drain, moss growth and leaks. Remove existing roofing. Install exterior tapered insulation board for positive drainage away from building. Install new membrane roof, 4000 sf. Add 150 lf gutter and downspouts routed to storm drain; protect downspouts from damage at dock. * Basement Kitchen: Replace roof (there is 1 small newer roof which is .ok) * Pharmacy: Replace roof. * Main Entry/ Lobby: Replace roof. At eyebrow roof with EPDM, replace 100 lf roof to wall flashing.		
Roof	282657	10	D	20	3	exceeds	\$1	Tile roofing leaks at screened mechanical area 10N roof (previous cooling tower location). Replace with EPDM roof. Correct roof drain issues. * 2015 FCA: this is a duplicate record. * Note to Station: Upon completion of associated projects, this record needs to be updated.		
Signage / Wayfindg	85232	1	A	10		8	\$0	* Exterior signage is excellent. * Interior: most interior signage is new and with Braille.		
Signage / Wayfindg	343840	2	D	10	3	exceeds	\$4,515	2-Annex: Room Numbers are "2E" with some duplication to other 2E rooms. Replace Annex signage with another room designation letter.		
Windows	343841	2	D	30	3	exceeds	\$0	When cleaning building exterior, inspect and replace exterior window seal. See Exterior Walls for cost.		
Windows	85233	1	B	30		17	\$0	Aluminum framed, double glazed windows (new in 2002).		
Total Correction							\$59,007,203	System Replacement Cost	\$73,462,500	Ratio: 0.80

Electrical	Rec No	Seq No	Condition	Useful Life	FCA Risk	Remain Life	Correction \$	Description
Elec/Tele Closets	85234	1	D	*	4	*	\$565,215	Electrical panels located in both public corridors and floor closets for normal and emergency panels. Panels located in public corridors are old, in fair condition, and locked. Branch electrical rooms being used as storage closets in large majority of spaces.
Elec/Tele Closets	282680	2	F	*	4	*	\$255,988	[Auto Generated Project Pending on 03/26/2015 for Project Number N/A - Electrical created by vhashrdegeom1.] Recommend a comprehensive study for coordination and arc-flash analysis for entire buildings.
Elec/Tele Closets	282681	3	D	*	4	*	\$579,673	Room BE26, and stacked electrical rooms four floor above, contain large mechanical piping within. Spaces do not meet NEC clearance requirements. Spaces contain little to no room for expansion.

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Electrical	Rec No	Seq No	Condition	Useful Life	FCA Risk	Remain Life	Correction \$	Description
Elec/Tele Closets	282682	4	D	*	4	*	\$90,634	Room 10W3A contains large mechanical piping within. Spaces do not meet NEC clearance requirements. Spaces contain little to no room for expansion.
Elec/Tele Closets	282683	5	A	*		*	\$0	Room 4W58 45 kVA transformer have been replaced and transformer temperature is within limit.
Elec/Tele Closets	342404	6	F	*	5	*	\$10,035	Room 3W60A - Pipe located with in working clearance of life safety panelboard.
Elec/Tele Closets	342405	7	F	*	5	*	\$35,837	Room 4W58 - A 45 kVA transformer is located with in working clearance of a 150 ampere 208Y/120 volt panelboard .
Elec/Tele Closets	342406	8	F	*	5	*	\$10,035	Room 4W34 - Pipe located within dedicated space above panel P4W.
Elec/Tele Closets	342407	9	F	*	5	*	\$10,035	Room 6N36 - Hot water pipe located within dedicated space above panel E6B.
Elec/Tele Closets	342408	10	F	*	5	*	\$5,352	Room 8W58 - Panel 8LELS has a 20/2 and 20/1 breaker combined with copper wire to make a 3/20 breaker.
Emerg Elec Sys.	282684	3	A	25		23	\$0	EMS-1 is a GE 208/120V, 3000A MLO emergency distribution switchboard with (3) 800A CB for the Life Safety and Critical branches, (1) 1200A spare, and (1) 2000A CB for the Equipment branch. The 2000A CB serves a 750kVA, 208V:480V dry-type transformer located in the main electrical room BE96. Equipment installed in March 2013
Emerg Elec Sys.	282685	4	A	25		23	\$0	EMS-2 is a GE 208/120V, 3000A MLO emergency distribution switchboard with (2) 800A CB, (1) 1200A CB, and (1) 2000A CB for the Equipment branches, and (1) 1200A Spare. The 2000A CB serves a 750kVA, 208V:480V dry-type transformer located in the main electrical room BE96. Installed in March 2013.
Emerg Elec Sys.	282686	5	D	25	4	23	\$242,483	Generator room contains three (3) new 800A GE Zenith ATS's and they do not contain bypass isolation. Generator room contains three (3) new 800A GE Zenith ATS's and they do not contain bypass isolation. ATS's installed in March 2013. ATS should be installed in a dedicated emergency electrical room for helth care facility per NFPA 110 aricle 7.2. and should have bypass isolation included.
Emerg Elec Sys.	282687	6	D	25	4	23	\$80,828	Generator room contains one (1) existing 800A Zenith ATS enclosure with new interior components and one (1) existing 800A Cutler-Hammer ATS enclosure with new interior components. ATS's do not contain bypass isolation. ATS should be installed in a dedicated emergency electrical room for helth care facility per NFPA 110 aricle 7.2. and should have bypass isolation included.
Emerg Elec Sys.	282688	7	D	25	4	23	\$250,718	Main electrical room BE96 contains two (2) new GE Zenith 1200A ATS's and they do not contain bypass isolation. ATS's installed in March 2013. ATS should be installed in a dedicated emergency electrical room for helth care facility per NFPA 110 aricle 7.2. and should have bypass isolation included.
Emerg Elec Sys.	282689	8	B	25		21	\$0	Sub-basement contains one (1) existing 1600A Eaton circuit breaker style ATS that does not contain bypass isolation.

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Emerg Elec Sys.	282690	9	F	25	4	*	\$141,531	Two (2) new 1200A Equipment branch ATS's, and associated upstream 750kVA, 208V:480V transformers, are located within the main normal electrical room BE96 within the hospital. This location does not comply with NFPA.
Emerg Elec Sys.	85235	1	A	25		23	\$0	Two (2) new Caterpillar 600kW/750kVA, 208/120V, 3phase, 4W interior generators (Generator 1 and Generator 2) installed and operating. Generators are tested monthly with load and annually with load bank. Each generator serves a GE 208/120V, 2000A MLO emergency distribution switchboard (EMS-1 and EMS-2)
Emerg Elec Sys.	118056	2	C	25		18	\$0	Four 10,000 gallon each below grade diesel tanks serve the two (2) new 600kW interior generators. Tank was cleaned in 2010 and no issues were noted at the time.
Fire Alarm	85236	1	D-	15	4	exceeds	\$3,359,883	[Field Engineer Review Completed on 07/21/2014 by vhashrdegeom1.] [Auto Generated Project Pending on 07/21/2014 for Project Number 667-CSI-101 created by vhashrdegeom1.] Existing fire alarm system is Johnson Control fire alarm system and it is obsolete (See Site Comments). Recommend all new digital addressable fire alarm system for the entire hospital.
Fire Alarm	342409	2	F	15	5	*	\$55,983	Fire Alarm notification devices are not located in compliance with NFPA 72. (see record 85236)
Lighting & Power	342410	2	F	20	5	*	\$8,673	Elevcator Equipment rooms requires GFIC receptacle.
Lighting & Power	342411	4	F	25	5	*	\$10,581	All roof top equipment do not have 120 volt service outlet.
Lighting & Power	85237	1	C	25		13	\$0	Majority of the building consists of T8 lamps.
Lighting & Power	118057	2	D	25	4	exceeds	\$1,722,983	[Field Engineer Review Completed on 07/21/2014 by vhashrdegeom1.] [Auto Generated Project Pending on 07/21/2014 for Project Number 667-CSI-101 created by vhashrdegeom1.] Electrical maintenance and testing performed in 2006. 15% of branch circuits are cloth covered RH and obsolete, need to be replaced with thermoplastic insulated conductors.
Lighting & Power	282692	3	F	25	5	22	\$34,184	Three (3) new operating rooms do not contain emergency battery lighting per NEC requirements.
Lightning Protect	85238	1	C	20		13	\$0	The LPS for B1 was repaired and extended as needed to certify the system to meet NFPA 780. Project was completed in Sep 2008.
Nurse Call/Int/TV	85239	1	B	15		11	\$0	[Field Engineer Review Completed on 07/21/2014 by vhashrdegeom1.] [Auto Generated Project Pending on 07/21/2014 for Project Number 667-08-108 created by vhashrdegeom1.] New Nurse Call system provided in approx. 2010.
Secondary Dist.	85240	1	C	30		3	\$0	Room BE-97, Switchboard NBCSB, GE AV-line 1200amp, 120/208V in fair condition.

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Secondary Dist.	118058	2	B	30		*	\$0	Electrical maintenance and testing completed in 2010 on all circuit breakers 225A and higher, and all transformers.
Secondary Dist.	282695	3	C	30		3	\$0	Sub-basement, Switchboard EMSEEQ-1, GE AV-line 1600amp, 120/208V in fair condition.
Secondary Dist.	282696	4	D	30	4	exceeds	\$202,828	Sub-basement, Switchboard NSBACSB, GE AV-line 1600amp, 120/208V in poor condition and past its' useful life.
Secondary Dist.	282697	5	D	30	4	exceeds	\$107,440	Sub-basement, G.E. 8000 Line MCC-N2MP, 600amp, 208V, 3-phase 4W is in fair to poor condition.
Secondary Dist.	282701	6	F	30	5	3	\$7,987	Sub-basement, Switchboard NBBSB, G.E. AV-line 1200amp 120/208V Requires double access pathway per NEC article 110-26.
Secondary Dist.	282702	7	F	30	5	3	\$30,105	Room BW14, Switchboard NBDSB, G.E. AV-line 1200amp 120/208V Pipe in a dedicated space above switchboard.
Secondary Dist.	282703	8	C-	30		3	\$0	Room 2AE101, GE 8000 Line MCC is 600A, 120/208V, 3phase, 4W. Contains some corrosion but is in fair condition.
Secondary Dist.	282704	9	A	30		27	\$0	Room B-S-3, Square D 1200A, 480/277V distribution panel "HDP1" installed in 2013.
Secondary Dist.	282705	10	A	30		27	\$0	Room B-S-3, Square D 250A, 480/277V Lighting Control Panelboard "HP1" installed in 2013.
Secondary Dist.	282706	11	A	30		27	\$0	Room B-S-3, Square D Integrated distribution panel with 112.5kVA transformer and three (3) 208/120V branch panelboards installed in 2013.
Secondary Dist.	342412	22	F	30	5	*	\$10,537	Panel EP1 - Water is condensing in panelboard.
Secondary Dist.	342413	23	F	30	5	*	\$10,537	Basement Audiology Panel 29 - Access pathway to panel is less than 24" wide.
Secondary Dist.	342414	24	F	30	5	*	\$5,017	Room 10W3A Panel EEQACP-10 top breaker is higher than 6'-7".
Secondary Dist.	342415	25	F	30	5	*	\$10,035	11th floor Panel 11C has water pipes in dedicated space under panel.
Secondary Dist.	342416	26	F	30	5	*	\$7,877	South wing 2nd floor electrical closet in hallway (No number) - A 112.5 kVA transformer is installed in closet and no exhaust fan. Install exhaust fan and a louver on door for cooling.
Secondary Dist.	342417	27	A	30		27	\$0	Funding has been obligated to correct the following deficiencies: Electric substation C is 480V 3-phase 4W, 750kVA with 1600amp switchboard. All Breakers in switchboard are used, no room for any new loads. Provide buss extensions and new distribution section. Existing Versa trip breakers are old technology and experience erratic operation during testing, recommend replacement with newer compatible electrical trip breakers.
Secondary Dist.	342418	28	F	30	5	*	\$10,035	Room 1W24A Panel INESEQ has Data rack installed in dedicated space under panel and is violation on NEC article 110.26.

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Secondary Dist.	342419	29	F	30	5	*	\$10,035	Room 1W28 Panel EM1C and ICELS - Steam piping is in working clearance of panels and a control junction box blocking access pathway. Is a violation of NEC article 110.26.
Secondary Dist.	342420	30	F	30	5	*	\$30,105	Room 2W37A: Panel 2CELS – Water pipe is in dedicated space below panel and above. Panel PL2 –Water pipe is 10" front of panel. Panel APC2 –Piping in dedicated space above panel. All in violation of NEC article 110.26.
Secondary Dist.	342421	31	F	30	5	*	\$10,035	Room 2W14B Panel 2WA - Data rack is in front of panel, and it is violation of NEC 110.26.
Secondary Dist.	327757	12	D	30	4	*	\$32,739	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. ATS-EEQ1, relocate piping and ductwork and provide catch basin over electrical equipment. Budget Cost Opinion includes a detailed assessment to establish the extent of work to correct deficiencies noted during our field investigation. Budget Cost Opinion includes costs for both relocating foreign systems and a detailed analysis. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327759	13	D	30	4	*	\$12,592	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panel SBELS1, abandoned conductors included cloth insulation. Non-terminated conductors were observed. Rust, corrosion and possible water staining was observed. Recommend immediate replacement. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327761	14	D	30		*	\$1,520	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panel EDP3AN, replace or install conduit insulators as required. Replace branch breaker, see EMER2-MEDVAC.tcc (Recommendations) for revised coordination condition. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327762	15	D	30	4	*	\$32,739	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panel EMS-EEQ1. Relocate piping and ductwork and provide catch basin over electrical equipment. Budget Cost Opinion includes a detailed assessment to establish the extent of work to correct deficiencies noted during our field investigation. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327763	16	D	30	4	*	\$25,184	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panels EP1, BW2 & SBELS1, SSOE Study has identified equipment/devices that are past their useful life. Recommend replace with new. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.

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Electrical	Rec No	Seq No	Condition	Useful Life	FCA Risk	Remain Life	Correction \$	Description
Secondary Dist.	327764	17	D	30	4	*	\$263,173	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panels - NPE1, NPE2, 11C, EEQACP10, 10A, 9A, 8D, EEQACP8, 8A, 8B, 8C, 8CA, 7D, EEQACP7, 7C, 7CA, 6D, 6B, 6C, A5C, 5CA, 5D, P4W, N4DXR1, N4NXR2, NPDA, NPDB, EEQACP4, 4D, 4F, 4B, 4C, N3D, 3D, 3A, 3B, 3C, 3CA, N2CPP, N2D, N2BPP, DP2, E2E, 2D, 2E2C, 2CA, 2CA1, 2B, N1H, N1D, N1G1, 1D, 1E, 1C1[44], 1CA, 1CB, 1B, PK1, PK1-1, PK1-2, NELS, NEC2, NBH, NBF, NBFPP, NBGNBD, BD, BCA, BC & EDP3AN, SSOE Study has recommended new settings for adjustable low voltage electronic trip and thermal magnetic circuit breakers in order to improve protection for personnel and equipment. For panel contains mold cased circuit breakers with fixed trip units, SSOE has recommended to replace breaker/device so better coordination can be achieved. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327765	18	D	30	4	*	\$321,663	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panels - NPEA, N10B, N10C, N10CEC, 11C, EEQACP11,10B, 10CA, 10CELS, E9EC, E9N1, E9N2, N9C, N9CEC, N8B, N8BEC, N8C, N8CEC, N8D, 8CELS, N7DEC, N7CEC, N7BEC, 7CELS, N6D, N6DEC, 7A1, 7A2, 7A3, N6BEC, 6CELS, A, E6A, E6B, EEQACP6, N5CEC, N5CXR, N5D, N5DEC, NEM1, NEM2, NEM3, NEM4, NEM5, N5BEC, N5BEC1, 5IPA, A, EEQACP5, PDC, X, 4NC, N3C3C, N3DEC, N3DEC, N3DXR1, N4B, N4BEC, 4CA, 3EEQ2, N3DA, N3DEC, N3DEC, N3DECA, N3E, N3EEC, N3EEC2B, N3EEQ, 3EEQ1, 3EEQ2, 3X, EC31, EC32, EEQACP3, N3B, N3B3C, N3C, N3CEC, P3NA, P3NS1CU, N2DEC, P2C, N2C, N2CEC, EEQACP2, LA, LB, LC, N2AELS, N2BEC, 2EEQ2, 2W1B, 2WA, ACP2, 2DB, 2CELS, 2CELS, 2B1L, 2B1R, 2B2L, 2B2R, 2A1, 2A2, 2A2, N1HEEQ, NGR1, N1G2, N1GELS, N1DEC, N1A2, N1B, N1BEC, N1C, N1CEC, 1E4D, 1EEQ2, 1CELS, 1C2, 1C, PTL, PTR, NEM6, PC, PG1, NEC1, NBH1, NBHEC, NBHEEQ, NBGELS, NBDDB, NBDPP, NBCEC, NBCSB, NBDEC, EP2, NBB, NBBEC, NBBEEQDP1, BLR-1, BLR-2, BPC1, BPC2, BW1, BDA [26], BCA1[29], BCB, BCELSBB, BA, SBEC2A, NSBL, NSBKDP, NSBEEA1Q, NSBACSB & EMS-EEQ1. SSOE Study has identified various code violations such as clearance issues, missing parts/component, illegal wiring, etc. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327766	19	D	30	4	*	\$3,148	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panel NSBXR, budget Cost Opinion is limited to a detailed assessment to establish the extent of work to correct deficiencies noted during our field investigation. Recommend a detailed load analysis including 30 day metering of incoming feeder and all individual branch feeders to determine accurate current loading. Budget Cost Opinion includes metering costs only and do not reflect any potential equipment or feeder replacement." For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.

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Secondary Dist.	327767	20	D	30	4	*	\$90,663	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panels N7B, N7C, 7B, N6B, N6C, N5C, N5B, 5A, 5B, 4A, 2EA, 2EB, N1A1, EMS1, NEEQ2, NBMP, NBC, EEQAPCPB, PN1/2 & PM1/2. SSOE Study has identified panels and devices that do not have adequate Short Circuit Rating during a fault condition. Recommend replace with proper AIC rating. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Secondary Dist.	327768	21	D	30	4	*	\$6,296	Correct deficiencies from SSOE Electrical Study (E23) completed in June 2014. Panels USSC & USSB, confirm the presence of 24 Vdc and replace the battery. An electronic copy of the GE AKR installation guide is included on the CD. For detail, refer to Appendix AR-A Electrical Equipment Condition Assessment Table.
Site Security	282707	1	B	15		11	\$0	New CCTV system installed in 2011. No issues noted.
Transformer	282708	3	C	30		3	\$0	Main electrical room BE96, Substation "B" is a GE two source primary selective, double-ended unit, main-tie-main, N.O. CB, 12.47KV: 480/277V, 1000KVA oil-filled. Substation is in fair condition but nearing the end of it's useful life.
Transformer	282709	4	C	30		3	\$0	Main electrical room BE96, Substation "C" is a GE two source primary selective, single-ended unit, 12.47KV: 480/277V, 750KVA oil-filled. Substation is in fair condition but nearing the end of it's useful life. New 36" wide section installed in 2010 with four (4) branch circuit breakers.
Transformer	282710	5	A	30		26	\$0	Exterior 500kVA, 12.47kVA:480/277V padmount transformer located east of B1-south in enclosed courtyard. Equipment installed in 2011 in good condition. Serves new exterior Square D 800A, 480/277V distribution panelboard.
Transformer	118059	2	B	30		*	\$0	Electrical maintenance and testing completed in 2010 on all circuit breakers 225A and higher, and all transformers.
Transformer	85242	1	C-	30		3	\$0	Main electrical room BE96, Substation "A" is a GE two source primary selective, double-ended unit, main-tie-main, N.O. CB, 12.47KV: 480/277V, 1000KVA oil-filled. Substation is in fair condition but nearing the end of it's useful life.
Transformer	342422	6	F	30	5	*	\$45,736	Main electrical room BE96 has five oil-filled transformers. Room wall are 3-1/2" fire rated but roof structure needs to be evaluated for 3-1/2" fire rating. On three side of roof has high-rise building structure and likely damaged if fire in this room.
Transformer	342423	7	C-	30		2	\$0	Electrical room 1E39, Substation "D" is a GE two source primary selective, single-ended unit, 12.47KV; 208/120V, 500kVA oil-filled. Substation is in fair condition but nearing the end of it's useful life.
System Total Correction				\$8,758,676		System Replacement Cost		\$36,731,250
								Ratio: 0.24