

APPENDIX Q

ELECTRICAL WALKDOWN CHECKLIST

<u>Checklist No.</u>	<u>Content</u>
WD-EE-01	All Equipment in Scope

PRELIMINARY

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A PDR



Texas Utilities Generating Company
Independent Assessment Program, Phase 4
Final Report TR-84056-01, Rev. 0



Independent Design Review Checklist

ELECTRICAL WALKDOWN CHECKLIST

Reviewer R. Uhlar/T. R. Martin

Approver E. van Stijgeren

Checklist No. WD-EE-01

Date 7/20/84

Item	Satisfactory			Comments
	Yes	No	N/A	
1. The nameplate data and location of the following equipment will be reviewed to ensure compliance of the installed equipment with the equipment specified in the design phase.				<div>PRELIMINARY</div>
a. CCW pump motor CP1-CCAPCC-01 to the requirements of G&H Specification 2323-ES-1D, "Electric Motors."	X			
b. The following motor operated valves with the preliminary vendor information provided in letter CVN-027, dated 8/16/77, as required by G&H specification 2323-MS-600, "Power Operated Valves."				All valves had 0.7 hp Reliance motors for Limotorque SMB-00/10 valve actuators. Preliminary design information identified valves HV-4512 and HV-4514 as having 1.0 hp motors. Per Limitorque, motor operator sizes vary depending on the actual manufacturer of the motor operator, and that the SMB-00/10 designation ensures the appropriate valve operating torque. This reduction in operator size does not affect the electrical
Valve No.				
HV-4512	X			
HV-4514	X			
HV-4524	X			
HV-4526	X			
HV-4572	X			
HV-4574	X			



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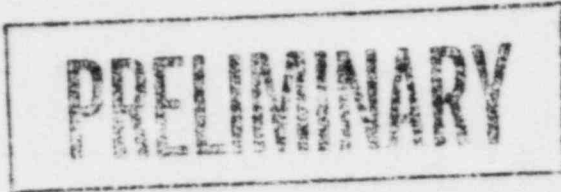
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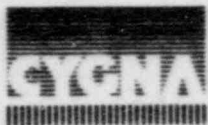
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	Yes	No	N/A									
<div></div> <p>c. The solenoids for the following valves with the vendor information provided in the following vendor drawings as required by G&H specification 2323-MS-600, "Power Operated Valves."</p> <table><tr><th>Valve No.</th><th>Drawing No.</th></tr><tr><td>LV-4500</td><td>35A2243</td></tr><tr><td>RV-4508</td><td>35A2227</td></tr><tr><td>FV-4536</td><td>G26246</td></tr></table> <p>d. 6.9 Kv switchgear 1EA1 compartment three to the requirements of G&H specification 2323-ES-5, "7.2 Kv Metal-Clad Switchgear and Accessories."</p>	Valve No.	Drawing No.	LV-4500	35A2243	RV-4508	35A2227	FV-4536	G26246	X			<p>installation design, and the fact that SMB-00/10 actuators were originally specified ensures the valves will perform their required function. This does not represent a generic design concern since motor sizes will only vary marginally for the use of different manufacturers motor operators and motor starters are manufactured to accommodate a range of motor sizes.</p> <p>All solenoid operated valves are in compliance with design criteria.</p>
Valve No.	Drawing No.											
LV-4500	35A2243											
RV-4508	35A2227											
FV-4536	G26246											



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e. The following compartments of 480 volt motor control center 1EB3-1 to the requirements of G&H specification 2323-ES-7, "Motor Control Centers."				
<u>Compartment No.</u>				
6J	X			Verified breaker frame size, trip rating, voltage level, and short circuit rating.
6M	X			
7C	X			
7F	X			
7J	X			
7M	X			
f. The following instrumentation to the requirements of the applicable G&H specifications:				
<u>Loop</u>				
<u>Specification</u>				
4500	2323-MS-611A	X		Agrees with DCA 6347.
4518	2323-MS-616	X		
4536A	2323-MS-611A	X		
4536B	2323-MS-611A	X		
4502A	2323-MS-620	X		Agrees with DCA 19,198. Agrees with DCA 19,198.
4502B	2323-MS-520	X		



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2. The installed raceways for the following cables will be re-viewed for:				
• Installed location in compliance with installation drawings.				All raceway locations, identification, separation and fill requirements were in compliance with design criteria. Tray points which are identified with only the last two digits or not identified at all are acceptable based on Paragraph 2.26.5.a.3 (c) and (e) of the G&H Electrical Erection Specification, 2323-ES-100 which state: (c) The cable tray identification number (e.g., T11GABB) shall be marked (on the outside of either tray side rail) at ends of each tray, at tray intersections and at intervals not to exceed 30 feet. For cable tray sections 10 feet or less in length, identification may be at the midpoint of the section.
• Routing point identification in compliance with installation drawings and change paper				
• Electrical train designation identification				
• Adequate train separation				
• Cable tray fill within side rails				
a. E0100001	X			
b. E0100555	X			
c. A0104340	X			
d. E0104347	X			
e. E0107008	X			
f. E0119630A	X			
g. E0119639	X			
h. E0119640	X			
i. E0119660	X			
j. E0119678	X			
k. E0119701	X			
l. E0119956	X			
m. A0119838	X			

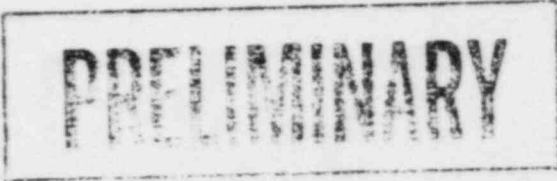
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				Cable tray identification node points (i.e., the last two numerical digits added to the cable tray identification number, example T11GABB09, T11GABB10, etc.) shall be stanciled on the same side of the tray as the cable tray identification number where shown on the electrical physical layout drawings.
				(e) At the discretion of the Owner's field representative, identification of conduit and cable tray is not required in cases when this identification would not be readily visible from floor level.



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3. The installation of the following cables will be reviewed for: <ul style="list-style-type: none">• Field cable termination block terminations in compliance with cabinet wiring drawings and change paper• Construction (i.e., voltage rating, number of conductors, size and jacket material) in compliance with applicable cable specifications, raceway schedule, and pull cards• Pull card routing in compliance with raceway schedule routing and change paper• Pulling tension calculation performed in accordance with TUSI instruction CP-EI-4.0-24• Pulling tension recorded on pull card in compliance with calculated maximum allowable tension• Adequate internal panel wiring (MCC's, switchgear, solid state isolation cabinets, shutdown transfer panel, termination racks, junction boxes, etc.) train separation				<ul style="list-style-type: none">• All cable terminations, construction, and separation requirements were found to be in compliance.• No pulling tensions were calculated or measured and recorded on any of the cable pull cards reviewed. This practice is acceptable based on Brown & Root's Procedure EEI-07 Paragraph 4.2.2 and 4.2.3 which negates the cable pulling monitoring for hand pulls or pulls entirely in trays, since there is no significant side wall tension when pulling entirely in trays.

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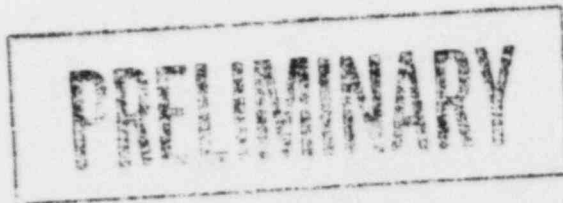
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a. E0100001	X			<ul style="list-style-type: none">The pull card to which E0107008 was pulled (Rev. 177A) is correct with respect to the physical installation but does not agree with the most recent revision of the G&H Cable and Raceway Schedule (2323-E1-1700 Rev. 326) - i.e., the initial conduit C-13009421 from MCC1EB3-1 to tray T130SCA50 is installed and utilized but is not shown in Rev. 326 of 2323-E1-1700.Further investigation revealed that conduit C-13009421 was manually assigned to routing point T130 SCA51 in subsequent DCA (No. 10606) for the routing of an additional cable utilizing conduit C-13009421. The computer did not flag this change since it will accept either routing point when a conduit leaves the tray system between two routing points. It did assume cable E0107008 as being an air drop, which was the reason for the raceway schedule
b. E0100555	X			
c. A0104340	X			
d. E0104347	X			
e. E0107008	X			
f. E011963A	X			
g. E0119639	X			
h. E0119640	X			
i. E0119660	X			
j. E0119678	X			
k. E0119701	X			
l. E0119956	X			
m. A0119838	X			



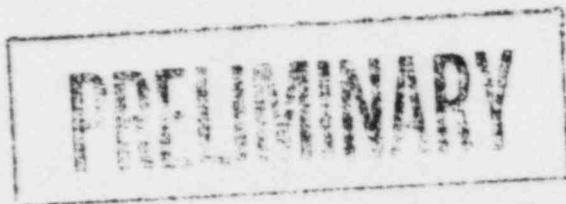


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				discrepancy. TUSI is correcting the raceway schedule. This was not considered a design concern since it did not adversely affect divisional routing or separation.
4. Review protective component settings and any available field testing documentation related to the verification of the setpoints of the following CCWS devices to the design setpoints. a. Switchgear 1EA1 compartment three, protective component settings. b. Switchgear 1EA1 compartment three protective model numbers	X	X		All overcurrent relays and circuit breaker trip ratings were in compliance with design criteria. The phase A overcurrent relay was labeled model no. 223S-3542 instead of 223S-8542. A field test and comparison of its time-current characteristics to manufacturer data identified the equipment as being model no. 223S-8542 as required. This discrepancy was apparently due to incomplete stamping of the number eight. This model no. is being corrected in the field.





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c. The following MCC 1EB3-1 compartment protective component equipment:				
<u>Compartment</u>				
6J	X			
6M	X			
7C	X			
7F	X			
7J	X			
7M	X			
<div>PRELIMINARY</div>				