DOCUMENT COVER SHEET

DOCUMENT NO.	REVISION	PAGE 1 of 34
GLIMM-RPS-PM-L1-000010-R0-NP-1	**0**	

PE SEAL (If required)

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TITLE: Limerick Generating Station Digital Modernization Project LAR Pre-submittal Meeting September 8, 2022

ATTACHMENTS:

N/A

Signature Responsibility	Name	SIGNATURE / DATE(If processing electronic approval select option)
ORIGINATOR	Warren R. Odess-Gillett	**Electronically Approved*** **
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Constellation

Limerick Generating Station
Digital Modernization Project
LAR Pre-submittal Meeting

NRC Pre-submittal Meeting
September 8, 2022

Closed Portion

SyRS /SyDS LAR content

SyRS /SyDS LAR content

- LGS is submitting two documents to fulfill the DI&C-ISG-06 R2 criteria for a System Requirements Specification (D.3.3.1)
  1. Westinghouse System Requirements Specification (SyRS) WNA-DS-04899-GLIM, R1
     - Provides the platform-neutral functional requirements
  2. Westinghouse System Design Specification (SyDS) WNA-DS-04900-GLIM R1
     - Provides the system architecture and interface requirements
     - Provides detailed design data (e.g., signal/channel termination assignments) in databases named in Appendix A
- The SyRS R1 will have the complete set of functional requirements for the PPS
- The SyDS R1 will have the system architecture requirements based on SyRS R0 a,c

SyRS /SyDS LAR content

a,c

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DI&C-ISG-06/SyDS R2 Impact Table

SyRS /SyDS LAR content

- ISG-06 states the role of the SyRS and SyDS submissions for the LAR as:

"The staff uses the SyRS to confirm that what is being designed is consistent with what is being reviewed in the LAR. The SyRS is a product of the modification life cycle development process and bounds the design."

SyRS /SyDS LAR content

a,c

Equipment Qualification Summary Report (EQSR)

EQSR

a,c

EQSR

a,c

EQSR

a,c

Deterministic Behavior

Deterministic Behavior

a,c

PPS and Ovation Power Supply

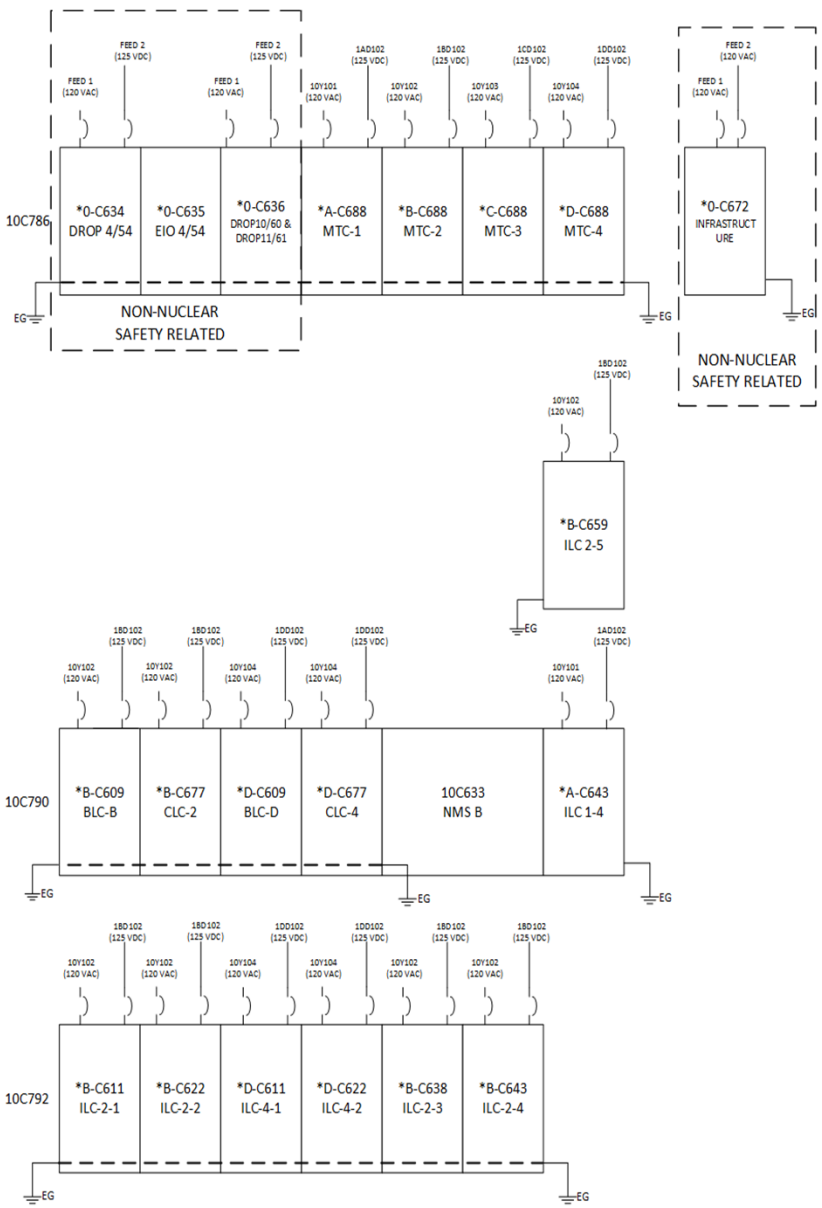
PPS/DCS Cabinet Power Supplies

- The PPS cabinet will be powered by two diverse power supplies, manufactured by two different suppliers:
  - Phoenix Contact QUINT-PS/1AC/24DC/20
  - [ ]a,c
- These two diverse PPS cabinet power supplies will be configured with diode-auctioneering to avoid a postulated CCF of the cabinet power supply system (i.e., CCF of PPS cabinet power is not assumed or postulated).

- The DCS cabinet will be powered by the Emerson PULS power supply, part # 1X00781H01L DIN RAIL SERIES POWER SUPPLY +24VDC, 10A, 240W

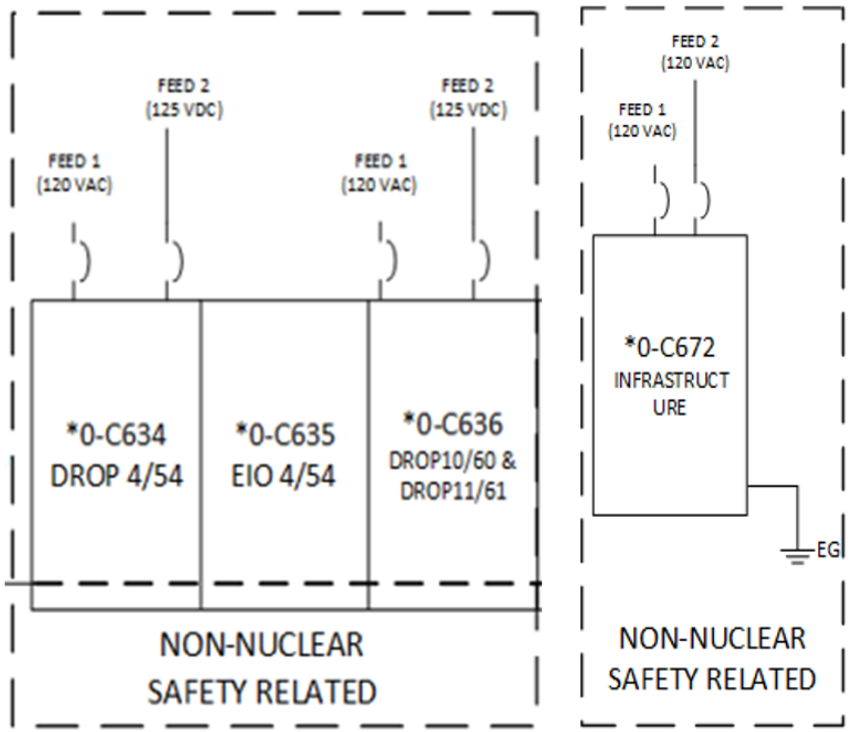
- The PPS and DCS cabinet power supplies are from different manufacturers to avoid any cabinet power CCF vulnerability between the two systems.

PPS Cabinet Power Distribution



- Each PPS cabinet receives two separate power feeds (120 VAC & 125 VDC)
- The PPS cabinets shall remain powered during a Loss of Offsite Power
- The PPS cabinet power feeds shall be separated by channel/division per the requirements of IEEE-384
- The loss of a single plant power bus shall not cause the PPS to be inoperable
- Grounds run between cabinets shall be sealed to meet fire separation criteria and shall be terminated on each end of the run

Diverse Protection System/DCS Power Sources



- Each DCS cabinet receives two separate power feeds (120 VAC & 125 VDC)
- DCS power feeds are non-safety related and are not the same circuits as the Plant Protection System
- FEED 1 - Non-Safeguard AC Instrument feeds will be used for the AC sources
- FEED 2 - Non-Safeguard DC feeds will provide the DC feeds

Closing Comments

Acronyms

ADS	Automatic Depressurization System	FPGA	Field Programmable Gate Array	PPS	Plant Protection System
AER	Auxiliary Equipment Room	FSAR	Final Safety Analysis Report	PSAI	Plant Specific Action Items
AOI	Advant Ovation Interface	HFE	Human Factors Engineering	QA	Quality Assurance
ARI	Alternate Rod Injection	HPCI	High Pressure Core Injection	QMP	Quality Management Plan
ARP	Alternate Review Process	HSL	High Speed Link	RAI	Request for Additional Information
ASAI	Application Specific Action Item	IBR	Incorporated by Reference	RCIC	Reactor Core Isolation Cooling
ATWS	Anticipated Transient Without Scram	ILP	Integrated Logic Processor	RHR	Residual Heat Removal
BPL	Bistable Protection Logic	INL	Idaho National Labs	RPS	Reactor Protection System
BWR	Boiling Water Reactor	I/O	Input/Output	RPV	Reactor Pressure Vessel
CAP	Corrective Action Program	ITAAC	Inspection, Test, Analysis, and Acceptance Criteria	RRCS	Redundant Reactivity Control System
CCF	Common Cause Failure	LAR	License Amendment Request	RWCU	Reactor Water Cleanup
CDO	Central Design Organization	LCL	Local Coincidence Logic	SER	Safety Evaluation Report
CRDR	Control Room Design Review	LGS	Limerick Generating Station	SFMS	Supplier Fundamental Management System
CIM	Component Interface Module	LOOP	Loss of Offsite Power	SDC	Shutdown Cooling
CRADA	Cooperative Research and Development Agreement	LPCI	Low Pressure Coolant Injection	SDV	Scram discharge volume
CPU	Central Processing Unit	LRA	Licensee Required Action	SLCS	Standby Liquid Control System
CS	Core Spray	LTR	Licensing Technical Report	SPDS	Safety Parameter Display System
D3	Defense-in-Depth and Diversity	MCR	Main Control Room	SPM	Software Program Manual
DCS	Distributed Control System	MPB	Manual Partial Bypass	SR	Safety-related
DDS	Data Display System	MPT	Manual Partial Trip	SRNC	Safety Remote Node Controller
DEHC	Digital Electro-Hydraulic Control	MSFIS	Main Steam and Feedwater Isolation System	SRV	Safety Relief Valve
DPS	Diverse Protection System	MSIV	Main Steam Isolation Valve	SSE	Safe Shutdown Earthquake
ECCS	Emergency Core Cooling System	NSR	Non safety-related	SyDS	System Design Specification
EDG	Emergency Diesel Generator	NSSSS	Nuclear Steam Supply Shutoff System	SyRS	System Requirements Specification
EOP	Emergency Operating Procedures	OAR	Owner's Acceptance Review	TS	Technical Specifications
EQSR	Equipment Qualification Summary Report	OBE	Operating basis earthquake	TU	Trip Unit
ESFAS	Emergency Safety Function Actuation System	PC	Personal Computer	UFSAR	Updated Final Safety Analysis Report
FMEA	Failure Modes and Effects Analysis	PMS	Protection and Monitoring System	VOP	Vendor Oversight Plan
FMEDA	Failure Modes, Diagnostics, and Effects Analysis	PPC	Plant Process Computer	WEC	Westinghouse

Approval Information

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