Limerick DMP LAR Acceptance Issues

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Issue #1 CIM Priority Module

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WEC CIM TR WCAP-17179-P

- Latest Revision is 6

- NRC essentially reviewed Revision 6 as stated in LTR Section 6.2.1.1:

  The CIM design is documented in the technical report WCAP-17179-P, "AP1000® Component Interface Module Technical Report", Reference 8. Westinghouse has docketed a previous revision 2 of WCAP-17179-P (see ML102170259 for non-proprietary version) for NRC review as part of the 10 CFR 52 AP1000 Design Certification process. It is a Tier 2* document incorporated by reference (IBR) in the Vogtle 3&4 UFSAR. A[s] shown in the references, WCAP-17179-P is currently at Revision 6. Since the release of Revision 6, Vogtle 3&4 submitted LAR 16-021 (ML16293A033) **capturing all the changes since WCAP-17179-P, Revision 2, in a UFSAR Appendix 7A.**

- Vogtle LAR 16-01, which the NRC reviewed and approved, included all changes to WCAP-17179-P including Revision 6, in the UFSAR Appendix 7A (LAR Enclosure 1P).

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CIM Configuration Differences between AP1000 and LGS PPS

- Although the CIM was developed initially for the AP1000 PMS, the design is generic as a priority module.
- The AP1000 CIM is exactly the same component as the LGS CIM with no configuration changes.
  - An AP1000 CIM can be swapped with an LGS PPS CIM without any configuration changes
- The application of the CIM generic component for the LGS PPS is described in LTR Section 3.2.5
  - CIM X-Port (SRNC) connects to the PPS just like it connects to the AP1000 PMS
  - CIM Y-port connects to the DCS for manual control and component feedback in exactly the same way as the AP1000 PLS
  - CIM Z-port connects to the DPS [DAS] for LGS PPS the same way as "ADS Blocker" is for PMS. AP1000 DAS does not go through [bypasses] the CIM.
- Only AP1000 licensing precedence being credited is the safety development process for the CIM and not the application of the CIM.

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CIM ISG-04 Compliance

- WCAP-17179-P describes the CIM internal design including communication for the three ports. These design descriptions are unchanged since the CIM is unchanged from AP1000.

- The 20 positions in ISG-04 Section 1 are very detailed in criteria for communications (e.g., fixed memory locations, etc.).

- WCAP-17179-P provides an ISG-04 compliance to these 20 positions. Since the internal design of the CIM is unchanged, many of these dispositions are the same regardless of the external interface.

- When a position is unique to PPS, this is explained in the LTR Section 3.2.21 ISG-04 table.

- ISG-04 Sections 2 & 3 compliance are in LTR Section 3.2.5 and do not refer to WCAP-17179-P

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CIM ISG-04 Section 1 Compliance Example

- Example (WCAP-17179-P disposition applies)

Position Number	Position Description	Disposition
2	The safety function of each safety channel should be protected from adverse influence from outside the division of which that channel is a member. Information and signals originating outside the division must not be able to inhibit or delay the safety function. This protection must be implemented within the affected division (rather than in the sources outside the division), and must not itself be affected by any condition or information from outside the affected division. This protection must be sustained despite any operation, malfunction, design error, communication error, or software error or corruption existing or originating outside the division.	CIM The CIM technical report disposition directly applies to the PPS application without modification. [WCAP-17179-P disposition states: "The safety function of the CIM is protected from adverse influence from outside its own division. The data link from the non-safety system uses a qualified fiber optic isolator to ensure that faults from the non-safety system can not affect the safety function. The data from the non-safety system is isolated by the priority logic in the CIM."]

- The WCAP disposition is directly applicable. As described in LTR Sections 3.5.7 and 3.5.8 qualified isolators are used.

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CIM ISG-04 Section 1 Compliance Example

- Example (CIM dispositioned in the LTR)

Position Number	Position Description	Disposition
3	A safety channel should not receive any communication from outside its own safety division unless that communication supports or enhances the performance of the safety function…. It should be demonstrated that the added system/software complexity associated with the performance of functions not directly related to the safety function and with the receipt of information in support of those functions does not significantly increase the likelihood of software specification or coding errors, including errors that would affect more than one division. The applicant should justify the definition of "significantly" used in the demonstration."	CIM The Y-port facilitates actuating component feedbacks independent of the AC160 portions of the PPS that are susceptible to a CCF. This provides the diverse display indications for these actuating components to support the DPS and SRM/SECY-93-087 Position 4. The Y-port also facilitates LGS operations to control individual safety components from the DPS/RRCS.

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CIM ISG-04 Section Compliance Example

- Example – WCAP-17179-P disposition applies

Position Number	Position Description	Disposition
6	Only predefined data sets should be used by the receiving system. Unrecognized messages and data should be identified and dispositioned by the receiving system in accordance with the pre-specified design requirements. Data from unrecognized messages must not be used within the safety logic executed by the safety function processor…..	CIM The CIM technical report disposition directly applies to the PPS application without modification.

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Issue #2 Partial Compliance to IEEE Std 603, Clause 5.6.1

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Limerick PPS Compliance to IEEE Std 603 Clause 5.6.1

- The LTR IEEE Std 603 / IEEE Std 7-4.3.2 Compliance Table has a typographical error in the Compliance status column

IEEE Std 603 Clause	IEEE Std 7-4.3.2 Clause	Title	Compliance/ Conformance	Section(s)
5.6.1		Between Redundant Portions of a Safety System	PC	3.5.14.1

- The Compliance/Conformance status should be "C"

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