Systems subject to upgrades under 50.59: [All NO entries should be changed to YES, after industry and staff reach agreement on specific preventive, limiting and likelihood reduction measures that can be credited.]

Application	Yes	No	Maybe	Comments
· EDG controls (governor, voltage regulator, and support systems)			X	
· ~~EDG~~ *ESF* Load Sequencers	~~X~~	*X*		*Load sequencers at most WEC plants can block ESF actuation, with and without LOOP. All load sequencers can block ESF actuation with LOOP. All load sequencers are relatively complex, due to the need to handle changing plant conditions before, during and after LOOP. There is already a documented incident of CCF for the digital load sequencer at Turkey Point.*
· Turbine Driven Pump Controls for Fluid Systems	X	*No, if the turbine drive pump is part of an ESF, such as aux feedwater.*		*Additional discussion required.*

· Charging/Safety Injection		*No, if the pump is part of an ESF. Safety injection is always part of an ESF, charging varies plant to plant.*	X	*Additional discussion required.*
· Service Water Systems	*Yes, because this is a support system that is not directly credited for accident mitigation and cannot directly initiate a plant transient.*		X	*Additional discussion required.*
· Essential Bus Protective Relaying	*X̶*	*X̲*		*Protective relaying is an essential component of the ESF systems.*
· Reactor Coolant Pump Under-Voltage/Under-Frequency Protective Relaying	X			
· Switchyard Protective Relaying (safety related at Oconee)	X	*No, if it directly supports RT/ESF functions.*		
· Breakers	X	*No, if it directly supports RT/ESF functions.*		
· Inverters	X	*No, if it directly supports*		

		RT/ESF functions.		
· HVAC Systems	*Yes, because this is a support system that is not directly credited for accident mitigation and cannot directly initiate a plant transient.*		X	Application Specific
· PAM Recorders/Indicators	X	*No for RG 1.97 Type A variables, because these directly support manual actions credited in the plant's accident analysis. Type A variables have the same safety significance as ESFAS.*		
· Control Board Indicators	X			
· Limited Changes To RPS/ESFAS/SSPS (individual card/module changes, end actuating devices, field input devices, changes that fall under the EQIV change process)		*No. Each of these components is essential to RT/ESF functions.*	X	Not portions of the logic. Additional discussion needed.

· Timing Relays		*No, if it directly supports RT/ESF functions.*	X	*Which relays and intended application?*
· Pressure/Flow Transmitters	X	*No, if it directly supports RT/ESF functions.*		*Except for digital communication outputs.*
· Nuclear Instrumentation (Source, Intermediate, and Power Range)		*No, if it directly supports RT/ESF functions.*	X	*Additional conversation needed. Recent approvals have gone through LAR process.*
· Radiation Monitors	X	*No, if it directly supports an ESF function.*		

Critical Attributes that Preclude Upgrades Under 50.59, Defined in Meeting:

1. *Combination of functions [There are very few digital upgrades that do not combine functions in some manner. Even protective relays in switchgear typically combine different protective functions (e.g., overcurrent, phase imbalance, ground faults) into a single digital device.*
2. *Networking of more than one train or multiple devices [This would preclude most non-safety digital upgrades, because most employ DCS technology, which includes networking and shared HSI.]*
3. *RPS/ESFAS actuation logic [RPS/ESF functions include sensors, signal processing, initiation logic (prior to voting), voting logic, actuation logic (after voting), load sequencing logic, component control logic, and controlled plant components (which often include protective interlocks). There is no technical basis to preclude only actuation logic when all of these elements are essential to the safety function and the level of complexity can vary significantly depending on the functional design and the digital implementation. For example, even component control logic can be complex depending on the controlled device, auto controls, permissive interlocks, actuation interlocks, protective interlocks, manual override functions, manual lock functions, test functions. There is no technical basis to preclude any RPS/ESF functions. The only defendable basis for exclusion is that RPS/ESF are safety significant and the RIS will not include specific preventive, limiting and likelihood reduction measures that can be*

credited. Based on this, Staff review of the credited defensive measures is appropriate for RPS/ESF functions (from sensors to controlled plant components).]

4. *Systems that have required diversity under their licensing basis [I see no basis to preclude a 50.59 evaluation for these systems. However, the RIS should be clear that any reduction in required diversity requires an LAR.]*

[This list should be moved to the front of the table.]