Public Meeting on Reg Guide 1.9 Rev. 5

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Issue #1: “Mission Time”

- The proposed language included in Revision 5 of RG 1.9 incorporates a first of a kind definition for mission time
  - Not defined in plant licensing documents
  - The definition conflicts with an already established definition supported by the NRC in NEI 99-02, Revision 7, Regulatory Assessment Performance Indicator Guideline (Reactor Oversight Process)

- The emergency AC power system has defense in depth:
  - Emergency AC power system design (multiple trains or swing diesel)
  - SBO rule provisions and equipment
  - Flex equipment

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Issue #1 Recommendation

- Remove the term “mission time” from the document:

> The onsite emergency AC power system is designed to supply power to safety systems that mitigate the effects of accidents and events delineated in the safety analysis and to power the equipment necessary for long-term cooling. The emergency AC power system design is based on systems important to safety, or as required by individual licensing basis, for accidents concurrent with a LOOP, as well as time to restore offsite power from a LOOP, due to external events. For example, the emergency AC power system can support core cooling capability. In 10 CFR 50.46(b)(5), the NRC requires core cooling capability for an extended period of time (i.e., as long as radioactive materials are present in the core).

Issue #2: Testing Environment

- Reg Guide 1.9, Revision 5, position 2.1 as proposed, does not include clarified language as discussed during the ACRS meetings that this refers to testing performed at the manufacturer:

> "2.1 EDGs should be designed so that they can be tested as described in IEEE Std 387-2017, Sections 5, 6, and 7. The design should allow testing of the EDGs to envelop the parameters of operation (e.g., manual start, automatic start, load sequencing, load shedding, and operation time), normal standby conditions, and environments (e.g., temperature, humidity) that would be expected if an actual demand were placed on the system."

Issue #2: Recommendation

- Modify C-2 2.1 as described below:

  IEEE Std 387-2017, Section 6.2 Initial Type Tests of the EDGs should be supplemented to demonstrate successful operation including the parameters of operation (e.g., manual start, automatic start, load sequencing, load shedding, and operation time), normal standby conditions, and environments (e.g., temperature, humidity) that would be expected if an actual demand were placed on the system. If pre-lubrication or prewarming systems (or both) designed to maintain lube oil and jacket water within a temperature range are normally in operation, this range would constitute normal standby temperature for the given plant.

Issue #3: Position C.2.3

- Not aligned with the proposed addition of Position C.2.3 (below) to supplement IEEE Std 387-2017, Clause 4.4, Table 1, because the proposed items are in reference to the preferred power source (that powers the Class 1E, AC distribution system), otherwise known as offsite power, and is outside the scope of the IEEE 387 Standard

C.2.3.a. Operation of the EDG in parallel with the preferred power source (test mode) and consequences of transient or degraded conditions in the preferred source should be considered for loading impact on the EDG

C.2.3.b. Operation of the EDG in parallel with the preferred power source (test mode) and capability to respond to a concurrent accident, LOOP, or combined accident and LOOP signal should be considered during this condition.

Issue #3: Position C.2.3

More appropriate to IEEE Std 308 and IEEE Std 741

More appropriate to IEEE Std 308

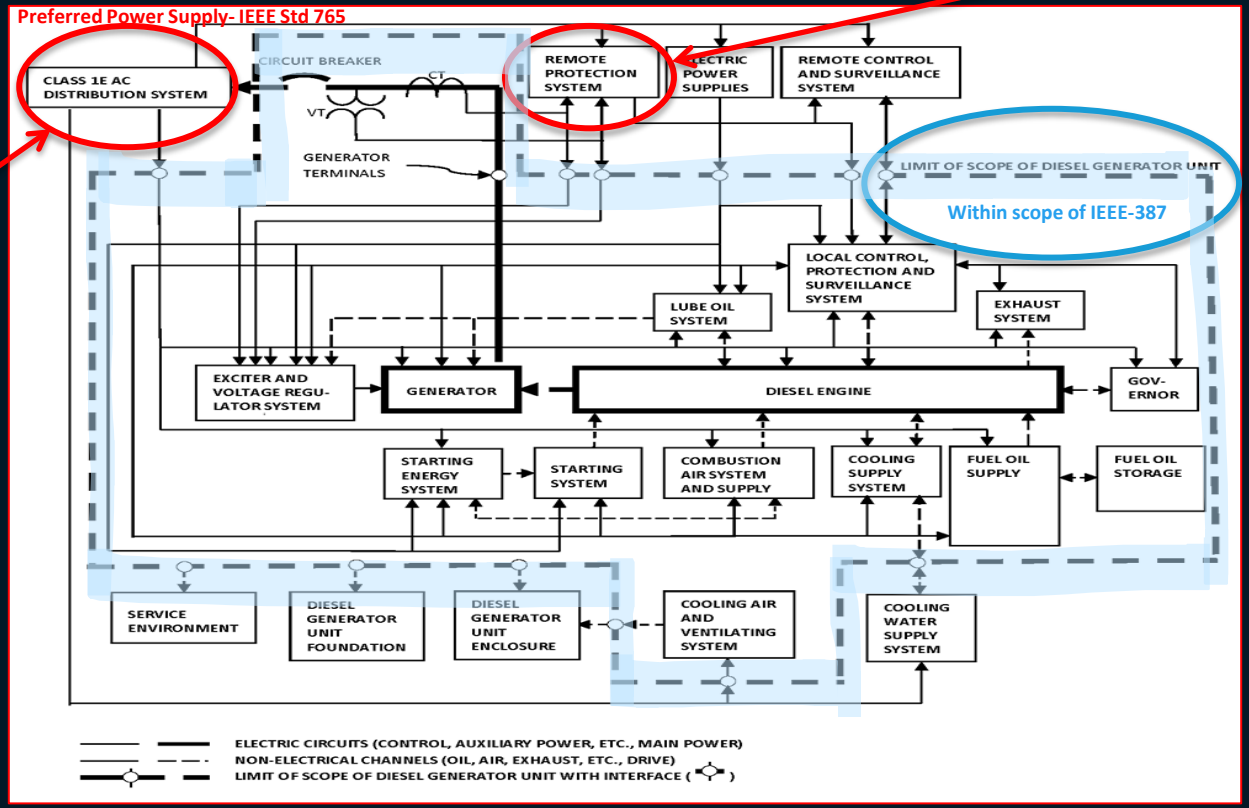

Figure 1
IEEE Std 387-2017

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Issue #3: Position C.2.3

- Any ***design*** associated with the detection and protection from a degraded ***preferred power supply*** should be considered part of the "*Remote Protection System"* per Figure 1 of IEEE Std 387-2017 and as such is outside the scope of IEEE Std 387
  - The appropriate standards for "*Remote Protection System"* would be IEEE Std 308 and IEEE Std 741
  - The appropriate standard for the ***preferred power supply*** would be IEEE Std 765

- The EDG responding to an accident, loss of offsite power, or both (***signal***) while the EDG is in test mode and paralleled to the grid, is an example of a protection signal that originates ***outside*** of the EDG scope "*Remote Protection System*" per Figure 1

- IEEE Std 387-2017 principal design criteria is to ensure that the design of the EDG will respond to a valid external signal, but it is not within the scope of IEEE 387 to design these ***Remote Protection Systems***

Issue #3: Recommendation

- Remove the proposed addition of Position C.2.3 to supplement IEEE Std 387-2017, Clause 4.4, Table 1

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