

Industry Comments on RG-1.9, Rev. 4, "Application and Testing of Safety-Related Diesel Generators"

1. New requirement to verify voltage requirements for a design-load rejection test that is inconsistent with industry standards

Regulatory Position 2.2.8, Design-Load Rejection Test requires 90-100 % load reject at rated power. A requirement has been added to verify that "voltage requirements are met", however, no requirement is provided. IEEE 387-1995 does not have a requirement for voltage for this test. This test is designed to assure the governor will prevent the engine from tripping on overspeed in the event of a full load reject. With an open breaker following a full load reject, voltage control is not as important as speed control. It would be difficult to establish a voltage requirement. When paralleled to the grid, the voltage setpoint is offset high to develop the rated kvar loading. Upon load rejection, the voltage will spike high (in some cases exceeding the vendor maximum voltage rating for the generator) and return to the setpoint. Depending on the grid voltage at the time, this setpoint can be above the 4576 V (4160 + 10%). A voltage requirement for a full load reject test can only be imposed when operating on an isolated bus. Due to the design of safety buses, it may not be practical to perform this test. It is recommended that the voltage requirement for this test be eliminated. The largest single load reject test provides assurance that the voltage regulator provides adequate control to maintain operation of safety related loads remaining on the bus.

With no voltage requirement for the full load reject test, the need to perform this test at rated power factor is not required. IEEE 387-1995 does not impose a power factor requirement for this test for the reasons stated above. It is recommended to perform this test and establish a limit on the maximum voltage or a response time (overshoot no greater than 15-20% and/or within 10% in 2 seconds). This will provide a more direct means of measuring the ability of the voltage regulator to adequately perform.

2. Revised Table 1 inconsistent with RG and industry standards

The revision to Table 1 is not consistent with the RG or IEEE 387-1995 in the following manners: 1) 7.2.1.1 (starting), 7.2.1.2 (load acceptance), and 7.2.1.3 (rated load) should only be checked for site acceptance tests and not monthly availability tests. The monthly availability tests are covered with 7.5.1 (start) and 7.5.2 (load run) per IEEE 387-1995, and Regulatory Position 2.3.2.1. As written, the Table creates confusion, and should be revised as stated above.

Request for clarification

Regulatory Position 1.5: The position requires that "the design should allow testing of the diesel generators to simulate environments (e.g. temperature, humidity)." Our comment was that it is impractical to control or "simulate" these conditions. The NRC responded that it was already in RG 1.9, R3 (we concur, but are concerned about future interpretations). Our problem is the requirement that our design simulate the temperature and humidity of the room. Everything else in the clause makes sense (simulate parameters of operation (such as manual start, load sequencing, load shedding, operation time, and normal standby conditions); but we are concerned on how the clause "simulate...environments" can be interpreted. For clarification, and to minimize confusion, we request the clause "and environments (humidity, temperature)", be struck from this Regulatory Position.

Industry Comments on RG-1.209, Rev. 0, "Guidelines for Environmental Qualification of Safety-Related Computer-Based I&C"

1. Unjustified application of documentation requirements for harsh environments to mild environments and increase in document retention requirements

The RG takes exception to using section 7.1¹ of IEEE Std. 323-2003 for qualification of components in a mild environment and instead recommends that the requirements for a harsh environment detailed in section 7.2² should apply. In addition, the staff has indicated that the expectation for onsite documentation for these components is beyond environmental qualification information required by IEEE 323. IEEE 323 is an established consensus standard and has specific requirements that are appropriate for different service environments. There is no justification for taking exception to the mild environment requirements or expanding the document retention requirements in a manner that offers no benefit to safety. The RG should be revised to be consistent with industry standards. The decision on what documentation should be retained in the facility is a business decision, not a safety decision.

2. The intended scope of RG 1.209 is not reflected in the actual scope described in the text of the RG

The comment resolution document for RG 1.209 and discussions with the staff at public workshops suggest that the intended scope of the regulatory guide is broader than environmental qualification - in direct conflict with the text and title of RG 1.209. Therefore revision of the document to provide clarification is necessary to support the mutual goal of high quality applications.

The expanded scope of documentation that will be required to be held at the facility has been increased to include virtually all design documents, including those associated with verifying that the computer system (hardware, software, and the integrated system) meets its specified performance requirements (i.e., computer system qualification). These new expectations are potentially inconsistent with other NRC guidance documents on digital systems (e.g., RG 1.152, SRP Appendix 7.0-A, SRP Appendix 7.1-C, SRP Appendix 7.1-D, BTP 7-14, and RGs 1.168-1.173); contrary to accepted industry environmental qualification standards; and offer no demonstrated benefit to safety.

If the intended scope is not consistent with the current text, then the staff should modify the title and content of RG 1.209 to be consistent with such scope in order to avoid confusion in the implementation of the guidance by licensees and the staff. The modified guidance should then be subject to normal NRC guidance process of NRC management reviews, Office of General Counsel, and CRGR scrutiny as it is a significant change in scope and staff position.

1 IEEE 323 Section 7.1 establishes documentation requirements for mild environment equipment. This documentation is limited to "the design/purchase specifications, seismic test reports (if applicable), and an evaluation and/or certificate of conformance."

2 IEEE 323 Section 7.2 establishes documentation requirements for harsh environment equipment. It specifies that such documentation shall provide evidence of qualification, including meeting its specification requirements and organized in a readily understandable and traceable manner. It identifies 16 requirements, 8 of which specifically relate to tests.

Industry Comments on RG-1.20, Rev. 3, "Comprehensive Vibration Assessment Program for Reactor Internals during Preoperational and Initial Startup Testing"

1. Unjustified expansion of scope to include steam generators in a RG for "reactor internals"

The RG title indicates it will focus on reactor internals, but it has been expanded to include steam generators. This expansion in scope is demonstrated in the following phrase from the RG, "For example, in PWRs, potential adverse effects should be evaluated for the steam generator internals." This expansion in scope results in process issues and practical considerations that illustrate that this guidance is inappropriate and technically inaccurate:

Process issues:

- The addition of steam generator testing to a reactor internals guide is inappropriate. The function of the reactor vessel to hold and support the fuel is fundamentally different than the function of the steam generator to generate steam.
- The updated SRP section for steam generators does not mention this RG.

Practical considerations:

- The guide suggests that the testing be done during initial startup and power ascension; however, the testing of the steam generators would have to be done at 100 percent power to achieve the conditions described in the RG.
- The testing is to include notification of the NRC staff and hold points. This is a significant impact on the start-up test program if steam generator vibration testing described in the RG is required since it would necessitate testing and hold points at 100 percent power. This testing relates to first-of-class facilities and for many designs, the first-of-class will be completed at a non-US location, (e.g., EPR, AP1000, and APWR).
- Vibration analyses of the reactor internals and predicted vibration response are provided to the NRC staff for review. The guide suggests that this would be required for the steam generators. This is a significant expansion of analysis and NRC review scope.

There is no regulatory or technical basis to support the expanded scope to include steam generators, and these requirements should be eliminated.

2. Inadequate response to industry comments

The comment resolution from the public comment period did not adequately address several items. Instead of removing items that had no regulatory basis, the reviewers left the information in the RG and characterized it as "helpful." Inclusion of this information in the RG suggests that it is technically accurate and potentially consistent with industry standards and NRC regulations. This is also not consistent with the information normally provided in a RG – how is "helpful" information to be used differently than the rest of the guidance? This new classification of information will cause confusion and misinterpretation and should not be included in a regulatory guidance document.

Industry Comments on RG-4.15, Rev. 2, "Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) – Effluent Streams and the Environment"

1. New guide represents an enhancement that has no benefit to health or safety

The new guide is an enhancement to the process that is unnecessary as indicated by statements in the RG that current programs are adequate to meet NRC requirements.

2. Underlying regulations are out of date and have been superseded in some cases

The new guide should not be implemented until the associated regulations and guidance for other areas of this program have been updated to reflect the latest standard for consistency. This should be accomplished through a planned update process that would be phased in as a full program update over a number of years.

3. Having a dual standard creates an unnecessary burden for the industry and the NRC

The majority of planned new reactors are co-located with operating reactors or will be part of a fleet operation. Posing a requirement for a new reactor effectively poses a backfit on existing operations or requires the company to maintain two separate programs. Similarly, NRC personnel would need to inspect two programs. The initial feedback is that the new program is more complex and more costly which adds to the burden of change-over costs if the operator chooses to upgrade all plants to the new program for consistency.

We propose that licensees should simply have the option of developing the COLA based on either the original or new (enhanced) version of the guide. The industry will work with the NRC to implement a full program update to new standards as described above in a systematic manner for all plants rather than segregating new plants from the rest of the operating fleet with no particular benefit.

Industry Comments on SRP Section 17.6, Maintenance Rule

The industry identified a number of questions and concerns about new SRP 17.6, Maintenance Rule, that was issued March 20. Discussions are continuing with the NRC staff in the following areas:

- Matters appropriate to address by inspection, i.e., in Inspection Procedure IP-62706.52 [future], and not in the SRP
- Matters that should be addressed in the context of a future revision to underlying regulatory guidance (i.e., NUMARC 93-01 and RG 1.160), and not in the SRP
- Matters beyond current regulatory guidance that operating and inspection experience nonetheless indicate should be addressed in MR programs. These matters would be considered for inclusion in a revision to NEI 07-02, *Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed under Part 52*.
- Simplification of SRP 17.6 via reference to underlying regulatory guidance, rather than repeating/paraphrasing the guidance
- Assuring consistency between SRP acceptance criteria and review procedures

Based on these discussions, NEI will resubmit NEI 07-02 for NRC review, and we understand that appropriate adjustments to SRP 17.6 and associated Sections of RG 1.206 will be implemented to reflect the conclusions of these discussions.

**Industry Comments on BTP 7-12,
Guidance on Establishing and Maintaining Instrument Setpoints**

The industry has reviewed BTP 7-12. Our comments are extensive and significant. We have major concerns over the requirements being imposed on nonsafety-related instruments. Our comments and concerns cover the following areas:

- Definitions
- Imposition of new regulatory positions on nonsafety instruments
- The acceptance criteria
- Safety setpoints that are not related to LSSS functions
- Procedural actions that are "important to safety"
- Calibration intervals
- Detailed loop diagrams, layout drawings, and installation details
- Criteria specific to digital designs

The industry will be sending detailed comments to the NRC before meeting with the NRC staff on June 13, 2007.