



5/20/08
73 FR 08791
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July 23, 2008

Rulemaking, Directives, and Editing Branch
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC (Duke)
Comments on Draft Regulatory Guide DG-1195, Availability of Electric
Power Sources

The purpose of this letter is to provide Duke comments on the draft Regulatory Guide DG-1195 dated May 2008. The availability of this draft Regulatory Guide was published in the *Federal Register* (73 FR 29791) on May 22, 2008.

Duke appreciates the opportunity to provide comments and submits an Attachment to this letter for consideration by the NRC staff. Comment number 6 in the attached recommends the development of a revision to the standardized technical specifications to address this situation generically.

If you have any questions, please contact R. L. Gill, Jr., at (704) 382-3339.

Sincerely,

Thomas P. Harrall, Jr.

Attachment

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Template = ADA-013

E-RIDS = ADA-03
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Duke Energy Carolinas, LLC
Comments on Draft Regulatory Guide DG-1195
Availability of Electric Power Sources

Comment No.	Comment Description
1	<p>The introduction to first bullet on page 2 states that it comes from GDC 17. However, the bullet states,</p> <p>“Two physically independent circuits..., each of which...can be made available within a few seconds...”</p> <p>and GDC 17 actually states,</p> <p>“...two physically independent circuits.... One of these circuits shall be designed to be available within a few seconds....”</p> <p>This misquote of GDC 17 should be corrected in the draft, along with any other corresponding changes.</p>
2	<p>RG 1.93 states,</p> <p>“Nuclear power plants wherein only one of the two required offsite circuits can be made available within a few seconds following a LOCA are outside the scope of this guide.”</p> <p>The draft replaced this sentence with,</p> <p>“Operating nuclear power plants for which only one of the two required offsite circuits can be made available within a few seconds following a LOCA must justify the delayed offsite circuit availability to support the core cooling systems.”</p> <p>Although this revised statement is a true statement in order to meet GDC 17, the draft proposes that the RG be applicable to ALL plants. This change would make the RG newly applicable to those plants wherein only one of the two required offsite circuits can be made available within a few seconds following a LOCA.</p> <p>Justification for this expansion of scope should be provided.</p>
3	<p>RG 1.93 discusses all the combinations of power source unavailability which then formed the basis for time periods to be specified in plant technical specifications. In the draft regulatory guide these time periods have been removed.</p> <p>If the draft regulatory guide is published (replacing Reg Guide 1.93) without the LCO time periods, what would serve as the basis for these time periods?</p>

Comment No.	Comment Description
4	<p>Section 3.2, The Available Onsite AC Power Sources Are One Less Than the LCO, states:</p> <p>“Since any inadvertent generator trip could potentially result in a total loss of ac power, the time allowed for continued operation should be severely restricted. In the absence of one onsite power source, the intent is twofold:</p> <ul style="list-style-type: none"> • Avoid the risk associated with immediate shutdown. • Minimize the risk associated with this level of degradation by severely limiting its exposure time.” <p>The argument that an “inadvertent generator trip could potentially result in a total loss of ac power” is not substantiated. This statement was apparently copied from Section 3.5 (...Onsite...Two Less...) of the draft (and Section 3 of RG 1.93) where the “generator trip” pertains to the main power generator. If the generator trip in Section 3.2 is also referring to the main power generator, this situation should have no effect unless the grid analysis indicates that such a trip would make the offsite power source unavailable. Also, this condition is applicable all the time and is not dependent on the onsite ac power source (e.g., diesel-generator). Therefore, the time allowed should be same as specified for Section 3.1, which is consistent with Section 1 of RG 1.93.</p> <p>In addition, the similarity in wording between Section 3.2 (...Onsite...One Less...) and Section 3.5 (...Onsite...Two Less...) are so similar that it appears the draft RG is saying that having One Less onsite source is the same as having Two Less onsite sources. Treating the conditions in Section 3.2 and Section 3.5 the same should be justified.</p> <p>RG 1.93 Section 1 was split apart in the draft RG as Sections 3.1 and 3.2 and the need for this split should be addressed.</p>
5	<p>Section 3.3, The Available Offsite AC Power Sources Are Two Less Than the LCO, states,</p> <p>“... Since the onsite power system is not degraded and a loss of offsite power simultaneous with a LOCA was postulated as a design basis, a brief interval of continued operation may be justified if an onsite source of ac power, independent of grid condition, is readily available and can act as a substitute train of ac power. ...”</p> <p>The corresponding Section 2 of RG 1.93 states,</p> <p>“... Since the onsite power system has not been degraded and simultaneous loss of offsite power and a LOCA were postulated as a design basis, a brief interval of continued operation is justified. ...”</p> <p>The significant changes proposed in the draft are to change “is” to “may be” and to add the qualifying “if” statement at the end of the sentence. Because this section, as well as this sentence, are under the premise that “the onsite power system is not degraded” it is confusing that these qualifying changes were made.</p> <p>These changes should be returned to match the existing RG 1.93 wording.</p>

Comment No.	Comment Description
6	<p>Section 2.2 addresses the situation where a degraded grid is the reason for the inoperability of the offsite power sources and the shutdown of the associated unit could worsen the situation.</p> <p>“Under certain conditions, it may be safer to continue operation at power for a limited time, rather than to implement an immediate shutdown upon loss of some required electric power sources. ...”</p> <p>Further in this section the draft mentions getting “appropriate approvals” (presumably a NOED) for these situations where it is judged safer not to comply with unit technical specification shutdown action statements.</p> <p>“... If, on balance, continued power operation is the safer course, the period of continued operation, with appropriate approvals, should be used to restore the lost power system elements (generation, transmission, and capacitor banks) and prepare for orderly shutdown, provided, of course, that these activities do not risk further degradation of the electric power system or in any way jeopardize the unit’s safety.”</p> <p>Rather than handling this conceivable situation indirectly (via “appropriate approvals”), the standardized technical specifications should be revised to directly address this issue and take into account the ability to monitor the transmission system and to specify actions that would not worsen the situation.</p>

REFERENCES

Criterion 17--Electric power systems. An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable. Each of these circuits shall be designed to be available in sufficient time following a loss of all onsite alternating current power supplies and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. One of these circuits shall be designed to be available within a few seconds following a loss-of-coolant accident to assure that core cooling, containment integrity, and other vital safety functions are maintained.

Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.