



NUCLEAR ENERGY INSTITUTE

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March 19, 2002

Mr. Christopher I. Grimes
Program Director
License Renewal and Environmental Impacts
Division of Regulatory Improvement Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Industry Response to Proposed Staff Guidance on Scoping of
Equipment Relied on to Meet the Requirements of the Station
Blackout Rule for License Renewal

PROJECT NUMBER: 690

Dear Mr. Grimes:

On November 14, 2001, NEI received the "Proposed Staff Guidance on Scoping of Equipment Relied on to Meet the Requirements of the Station Blackout (SBO) Rule for License Renewal," 10 C.F.R. § 50.63. Meetings were held on January 10, and 15, 2002, to discuss the staff's concerns regarding the treatment of SBO requirements in the context of license renewal scoping activities pursuant to 10 C.F.R. Part 54. As a result of these discussions, the staff forwarded, on January 28, supplemental information supporting its SBO-related concerns and requested industry's review and comment. A follow-up meeting was held at NRC offices on February 14, 2002.

In response to these meetings NEI received proposed staff guidance clarification, dated March 1, 2002. The industry disagrees in principal with the staff's position we believe the enclosed markup of the March 1 correspondence provides a practical compromise. In particular with respect to the last paragraph, which discusses alternate AC power, it appears to us to be superfluous in terms of providing additional guidance. Accordingly we suggest that it be deleted.

The plant's current licensing basis (CLB) is the primary focus of scoping activities under Section 54.4(a)(3). This is because a plant's CLB documents licensees

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compliance with the SBO rule. We believe it is incumbent on each license renewal applicant to determine, on a plant-specific basis, the level of reliance placed on the plant systems portion of offsite power to demonstrate compliance with the requirements of 10 CFR 50.63. For plants that rely on offsite power to recover from a SBO event, the offsite power sources that are part of the plant systems are clearly in the scope of License Renewal. For plants that rely on an Alternate AC source to recover from a SBO event, NEI believes that the offsite power sources at these plants are not in the scope of License Renewal because they are not part of the plant's current licensing basis.

If the circuits between the offsite transmission network and the onsite essential auxiliary power systems are brought into scope, then the NRC staff should recognize that the maintenance that is currently performed on this equipment adequately manages aging. These circuits are subject to Technical Specifications specifying Limiting Conditions for Operation. It is recognized that offsite power sources are highly reliable and are well maintained. In this regard, licensees should be able to maintain this equipment as is currently done under the station program; or maintained by the company responsible for this equipment. This company could be a different part of the utility that owns the plant or a company that has no association with the plant.

If you have any questions, please call me (202) 739- 8110 or by e-mail (apn@nei.org).

Sincerely,

A handwritten signature in dark ink, appearing to read 'Alan Nelson', with a stylized flourish at the end.

Alan Nelson

Enclosure

c: P.T. Kuo
P. Kang

March 1, 2002

Mr. Alan Nelson
Nuclear Energy Institute
1776 I Street, NW, Suite 400
Washington, DC 20006-3708

Mr. David Lochbaum
Union of Concerned Scientists
1707 H Street, NW, Suite 600
Washington, DC 20006-3919

SUBJECT: PROPOSED STAFF GUIDANCE ON SCOPING OF EQUIPMENT RELIED ON TO
MEET THE REQUIREMENTS OF THE STATION BLACKOUT (SBO) RULE
(10 CFR 50.63) FOR LICENSE RENEWAL (10 CFR 54.4(a)(3))

Dear Messrs. Nelson and Lochbaum:

On February 14, 2002, the Nuclear Regulatory Commission (NRC) staff met with Nuclear Energy Institute (NEI) and other industry representatives to continue discussion of the subject issue from our earlier meetings that were held on January 10 and 15, 2002. At the February 14 meeting, the staff agreed to re-state the above subject staff guidance to articulate further the staff position on scoping of SBO equipment in accordance with the requirements of the license renewal rule 10 CFR 54.4(a)(3) and the SBO rule (10 CFR 50.63). The staff also agreed to forward the revised staff guidance to NEI and Union of Concerned Scientists within 2 weeks.

The staff has revised the proposed staff guidance to incorporate the discussion on the boundary of the recovery equipment that should be within the scope. If you agree with this proposed staff guidance as revised, it is also possible that comparable changes might need to be made to NEI 95-10, Revision 3, "Industry Guidance for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule." If you have any questions regarding this matter, please contact Peter Kang at 301-415-2779.

Sincerely,

/RA/

Christopher I. Grimes, Program Director
License Renewal and Environmental Impacts
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project 690

Enclosure: As stated

cc w/encl: See next page

Staff Position

Consistent with the requirements specified in 10 CFR 54.4(a)(3) and 10 CFR 50.63(a)(1), the plant system portion of the offsite power system should be included within the scope of license renewal. The reasons for support of this position follow:

Rationale

The license renewal rule, 10 CFR 54.4(a)(3), requires that, "All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for.....station blackout (10 CFR 50.63)" be included within the scope of license renewal. The station blackout (SBO) rule, 10 CFR 50.63(a)(1), requires that each light-water-cooled nuclear power plant licensed to operate be able to withstand and recover from a station blackout of a specified duration that is based upon factors that include: "(iii) The expected frequency of loss of offsite power; and (iv) The probable time needed to restore offsite power." The SBO rule in this regard is consistent with the staff findings identified in the statement of considerations and NUREG-1032. In particular, with regard to factor (iv), the staff found that offsite power is more likely to be restored (0.6 hours median time to restore) than the emergency diesel generators (8 hours median time to repair) ending an SBO event.

SBO is the loss of offsite and onsite ac electric power to the essential and non-essential switchgear buses in a nuclear power plant. It does not include the loss of ac power fed from inverters powered by station batteries nor loss of ac power from an SBO defined alternate ac power source. The SBO rule was added to the regulations in 10 CFR Part 50 because, as operating experience accumulated, concern arose that the reliability of both the offsite and onsite ac power systems might be less than originally anticipated, even for designs that met the requirements of General Design Criteria 17 and 18. As a result, the SBO rule required that nuclear power plants have the capability to withstand and recover from the loss of offsite and onsite ac power of a specified duration (the coping duration).

Licensees' plant evaluations followed the guidance specified in NRC Regulatory Guide (RG) 1.155 and NUMARC 87-00 to determine their required plant-specific coping duration. The criteria specified in RG 1.155 to calculate a plant-specific coping duration were based upon the expected frequency of loss of offsite power and the probable time needed to restore offsite power, as well as the other two factors (onsite emergency ac power source redundancy and reliability) specified in 10 CFR 50.63(a)(1). In requiring that a plant's coping duration be based in part on the probable time needed to restore offsite power, 10 CFR 50.63(a)(1) is specifying that the offsite power system be an assumed method of recovering from an SBO. Disregarding the offsite power system as a means of recovering from an SBO would not meet the requirements of the rule and would result in a longer required coping duration.

Enclosure

The use of the offsite power system within 10 CFR 50.63(a)(1) as a means of recovering from an SBO should not be construed to be the only acceptable means of recovering from an SBO. A licensee could for example recover offsite power or emergency (onsite) power. It is not possible to determine prior to an actual SBO event which source of power can be returned first. As a

result, 10 CFR 50.63(c)(1)(ii) and its associated guidance in RG 1.155, Section 1.3 and Section 2, requires procedures to recover from an SBO that include restoration of offsite and onsite power.

Based on the above, both the offsite and onsite power systems are relied upon to meet the requirements of the SBO rule. Elements of both offsite and onsite power are necessary to determine the required coping duration under 10 CFR 50.63(a)(1), and the procedures required by 10 CFR 50.63(c)(1)(ii) must address both offsite power and onsite power restoration. It follows, therefore, that both systems are used to demonstrate compliance with the SBO rule and must be included within the scope of license renewal consistent with the requirements of 10 CFR 54.4(a)(3). License renewal applicants are presently including the onsite power system within the scope of license renewal on the basis of the requirements under 10 CFR 54.4 (a)(1) (safety-related systems). They are also including equipment that is relied upon to cope with an SBO (e.g., alternate ac power sources) on the basis of the requirements under 10 CFR 54.4(a)(3). Only the addition of the offsite power system is therefore necessary to complete the required scope of the electrical power systems under license renewal.

The offsite power systems of U.S. nuclear power plants consist of a transmission system (grid) component that provides a source of power and a plant system component that connects that power source to a plant's onsite electrical distribution system which powers safety equipment. The staff has historically relied upon the well-distributed, redundant, and interconnected nature of the grid to provide the necessary level of reliability to support nuclear power plant operations. For purposes of the license renewal rule, the staff has determined that the plant system portion of the offsite power system that is used to connect the plant to the offsite power source should be included within the scope of the rule. This path typically includes the switchyard circuit breakers that connect to the offsite system power transformers (startup transformers), the transformers themselves, the intervening overhead or underground circuits between circuit breaker and transformer and transformer and onsite electrical distribution system, and the associated control circuits and structures. By ensuring that the appropriate offsite power system long-lived passive structures and components that are part of this circuit path are subject to an aging management review, we will ensure that the bases underlying the SBO requirements are maintained over the period of license renewal. This is consistent with the Commission's expectations in including the SBO regulated event under 10 CFR 54.4(a)(3) of the license renewal rule.

~~Alternate ac power sources were accepted under the SBO rule as an alternate means of withstanding an SBO. The definition of an alternate ac power source is contained in 10 CFR 50.2. The definition addresses the capability of these power sources to cope with an SBO but not to recover from an SBO. While a very small number of alternate ac power sources may be very robust, the staff nevertheless finds that they were only reviewed as a means of coping with an SBO for the plant specified coping duration.~~