



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

September 29, 2011

Mr. Dennis R. Madison
Vice President
Southern Nuclear Operating Company, Inc.
Edwin I. Hatch Nuclear Plant
11028 Hatch Parkway North
Baxley, GA 31513

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT – NRC RESPONSE TO BACKFIT APPEAL

Dear Mr. Madison:

On May 25, 2011, the Nuclear Regulatory Commission (NRC) staff issued Inspection Report 05000321 and 366/2011009 to Southern Nuclear Operating Company (SNC) that included a backfit resulting from the Component Design Bases Inspection (CDBI) performed at the Edwin I. Hatch Nuclear Plant (HNP) in July 2009. That report concluded that HNP was not in compliance with the degraded voltage protection requirements of 10 CFR Part 50, Appendix A, General Design Criterion 17 "Electrical Power Systems" (GDC-17) and 10 CFR 50.55a(h)(2). The backfit to HNP was issued under the "compliance exception" provision of 10 CFR 50.109(a)(4)(i).

In a letter dated June 17, 2011, SNC disagreed with the conclusion in the May 25, 2011, report and appealed the NRC's decision to issue the backfit under the "compliance exception" provision of 10 CFR 50.109(a)(4)(i). In your appeal, you stated that a cost justified substantial safety backfit analysis, per 10 CFR 50.109(a)(3), was required. At issue was the reliance on administrative controls and manual actions at HNP, as approved in the 1995 NRC Safety Evaluation Report (SER), for maintaining adequate voltage to protect Class 1E (safety-related) electrical equipment in the event of degraded voltage conditions.

After review and consideration of SNC's response, the NRC has concluded that the decision to use the "compliance exception" provision as allowed by 10 CFR 50.109(a)(4)(i) was appropriate. The staff maintains its position that SNC's electrical analysis for HNP must show that the existing setpoints and time delays are adequate to ensure that all safety-related loads have the required minimum voltage measured at the component terminal to start and operate safety-related equipment necessary to mitigate the consequences of the worst-case design basis event (DBE), without any credit for administratively controlled bus voltage levels. The staff maintains that this position is consistent with regulatory requirements specified in 10 CFR 50.55a(h)(2) and GDC-17. This staff position is also consistent with the guidance provided in Standard Review Plan, NUREG-0800 (July 1981), Branch Technical Positions (BTPs) of Appendix 8-A (PSB), containing BTP PSB-1, "Adequacy of Station Electric Distribution System Voltages."

Further, the staff concludes that the NRC change in position, from that in the 1995 SER, regarding the acceptability of relying on manual operator action to demonstrate compliance with

the applicable provisions of GDC-17 and 10 CFR 50.55a(h)(2), constitutes backfitting as defined in 10 CFR 50.109(a)(1). The backfitting action is necessary for compliance with GDC-17 and 10 CFR 50.55a(h)(2) and is consistent with applicable guidance and practices in effect at the time that the NRC staff erroneously approved the use of manual actions responding to degraded grid voltage condition in 1995.

Although SNC has been in compliance with its 1995 license amendment approving SNC's degraded voltage protection system configuration, SNC also has been in violation of GDC-17 and 10 CFR 50.55a(h)(2) due to the NRC's erroneous approval of the 1995 license amendment. The NRC is exercising enforcement discretion for SNC's failure to comply with GDC-17 and 10 CFR 50.55a(h)(2) because SNC's failure to comply resulted from the NRC incorrectly issuing the license amendment in 1995. You are requested to respond within 30 days to this letter with a description of your intended actions to address this condition, including a proposed schedule to complete those actions. The NRC will determine the duration of the enforcement discretion after reviewing your proposed corrective actions and schedule for coming into compliance with GDC-17 and 10 CFR 50.55a(h)(2).

Under the NRC's backfit policy in NUREG-1409, "Backfitting Guidelines," you have 30 days from the date of this letter to appeal to the NRC Executive Director of Operations (EDO) the determination of the backfit or the applicability of the provisions of 10 CFR 50.109(a)(4)(i). Your response should be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission – Region II, 245 Peachtree Center Ave., NE, Suite 1200, Atlanta, GA 30303-1257; and the Resident Inspector Office at the Hatch Facility.

In accordance with 10 CFR 2.390, a copy of this letter, its enclosure, and your response will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact Mr. Joel Munday at (404) 997-4600.

Sincerely,

/RA by Leonard D. Wert Acting For/

Victor M. McCree
Regional Administrator

Docket No.: 50-321, 50-366
License No.: DPR-57, NPF-5

Enclosure: Backfit Appeal Response

cc w/encl.: (See page 3)

the applicable provisions of GDC-17 and 10 CFR 50.55a(h)(2), constitutes backfitting as defined in 10 CFR 50.109(a)(1). The backfitting action is necessary for compliance with GDC-17 and 10 CFR 50.55a(h)(2) and is consistent with applicable guidance and practices in effect at the time that the NRC staff erroneously approved the use of manual actions responding to degraded grid voltage condition in 1995.

Although SNC has been in compliance with its license, it also has been in violation of NRC requirements due to the change in NRC position promulgated by our earlier acceptance of this inadequate degraded voltage protection system configuration. The NRC is exercising enforcement discretion for SNC's failure to comply with GDC-17 and 10 CFR 50.55a(h)(2) because its failure to comply resulted from the NRC incorrectly issuing the license amendment in 1995. You are requested to respond within 30 days to this letter with a description of your intended actions to address this condition, including a proposed schedule to complete those actions. The NRC will determine the duration of the enforcement duration after reviewing your proposed corrective actions and schedule for coming into compliance with GDC-17 and 10 CFR 50.55a(h)(2).

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Enclosure: Backfit Appeal Response
cc w/encl.: (See page 3)

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE
ADAMS: X Yes ACCESSION NUMBER: ML112730194 X SUNSI REVIEW COMPLETE X FORM 665 ATTACHED

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SIGNATURE	/RA/	/RA/	/RA/	/RA/ via Email	/RA/ via Email	/RA/ Wert
NAME	B. Desai	H. Christensen	J. Munday	R. Mathew	H. Benowitz	V. McCree
DATE	09/12/2011	09/15/2011	09/18/2011	09/27/2011	09/27/2011	09/29/2011
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

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Letter to Dennis R. Madison from Victor M. McCree dated September 29, 2011.

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT – NRC RESPONSE TO BACKFIT APPEAL

Distribution w/encl:

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NRC EVALUATION OF LICENSEE BACKFIT APPEAL

Introduction:

The NRC reviewed the June 17, 2011, letter in which Southern Nuclear Operating Company (SNC) appealed the backfit related to the degraded voltage protection concern at the Edwin I. Hatch Nuclear Plant (HNP). The backfit to HNP was issued under the "compliance exception" provision of 10 CFR 50.109(a)(4)(i). SNC disagreed with the NRC and stated that the backfit under the compliance exception was not appropriate or necessary and that the NRC should have pursued a cost justified substantial safety backfit analysis, per 10 CFR 50.109(a)(3), for the resolution of degraded voltage protection issues at HNP. At issue was the reliance on administrative controls and manual actions at HNP for maintaining adequate voltage to protect Class 1E (safety-related) electrical equipment in the event of degraded voltage conditions which was approved by the NRC and documented in a Safety Evaluation Report (SER) in 1995.

NRC EVALUATION OF LICENSEE APPEAL

1. In its letter dated June 17, 2011, appealing the backfit, SNC stated that the NRC thoroughly understood the degraded voltage configuration at HNP, and was deliberate and thoughtful in its action in concluding in the 1995 SER that the requirement of 10 CFR Part 50, Appendix A, General Design Criterion 17, "Electrical Power Systems" (GDC-17) was met. The appeal stated that the NRC staff made no error in issuing the SER and therefore, backfit under the compliance exception provision would be inappropriate. Further, in the appeal, SNC stated that the compliance exception is intended to address situations in which the licensee has failed to meet known and established standards of the Commission "because of omission or mistake of fact" and that new or modified interpretations of what constitutes compliance would not fall within the exception requiring a backfit analysis and application of the standard. SNC also stated that allowing the manual actions was not a staff error applicable to a very limited number of plants as the staff has a history of allowing manual actions associated with GDC-17. SNC suggested that the backfit represented a new staff position.

The NRC reviewed the appeal and determined, based on the discussion below, that the NRC indeed made an error in approving manual actions instead of automatic actions, in the 1995 SER to address degraded voltage protection at HNP. The staff's change in position on the acceptability of relying on manual operator action to demonstrate compliance with the applicable provisions of GDC-17 and 10 CFR 50.55a(h)(2) constitutes backfitting as defined in 10 CFR 50.109(a)(1).

The fundamental requirements for electric power systems are described in GDC-17. GDC-17 requires, in part, that electric power from the transmission network to the onsite distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as 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 unit, or the loss of power from the transmission network. GDC-17 also requires that the safety function for each system shall be to provide sufficient capacity and capability to assure that fuel design limits are not exceeded in the event of anticipated operational occurrences and that the core is cooled in the event of postulated accidents. Such accidents may include those associated with degraded grid voltage conditions that challenge the operating low voltage limits of safety-related equipment power generated by the nuclear unit, or the loss of power generated by the nuclear unit, or the loss of power from the transmission network.

Enclosure

Section 50.55a(h)(2) requires that for nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, protection systems must meet the requirements stated in either IEEE Std. 279, "Criteria for Protection Systems for Nuclear Power Generating Stations," or in IEEE Std. 603-1991, "Criteria for Safety Systems for Nuclear Power Generating Stations," and the correction sheet dated January 30, 1995. For nuclear power plants with construction permits issued before January 1, 1971, protection systems must be consistent with their licensing basis or may meet the requirements of IEEE Std. 603-1991 and the correction sheet dated January 30, 1995. These IEEE Standards state that the protection systems must automatically initiate appropriate protective actions whenever a condition monitored by the system reaches a preset level. Once initiated, protective actions should be completed without manual intervention to satisfy the applicable requirements delineated in IEEE standards.

A July 1976 event at the Millstone Power Station identified that in certain situations involving degraded offsite voltage conditions, vulnerabilities existed in providing power to redundant safety-related systems. As a result of further NRC evaluation of the Millstone event, it was determined that improper voltage protection logic can also cause adverse effects on the Class 1E systems and equipment, such as spurious load shedding of Class 1E loads from the standby emergency diesel generators and spurious separation of Class 1E systems from offsite power due to normal motor starting transients (ADAMS Accession No. ML093521388). The NRC addressed this vulnerability in a letter dated June 2, 1977, "Statement of Staff Positions Relative to Emergency Power Systems for Operating Reactors." (ADAMS Legacy No. 4007002656)

The 1977 NRC letter recognized that operating procedures and guidelines utilized by electric utilities and their interconnected cooperatives and organizations minimized the probability for the degraded conditions to occur. Nevertheless, since degradation of the offsite power system could lead to or cause the unacceptable failure of redundant safety-related electrical equipment, the 1977 NRC letter recognized the need for a safety-related second level undervoltage protection scheme to be implemented by all nuclear power plants to meet the requirements of GDC-17 to ensure automatic protection of safety buses and loads. The staff position and guidance have not changed since the June 2, 1977, letter was issued.

Subsequently, the NRC staff issued Generic Letter 79-36, August 8, 1979, "Adequacy of Station Electric Distribution Systems Voltages," (ADAMS Legacy No. 7908230155) following a degraded voltage event at the Arkansas Nuclear One (ANO) plant, expanding the NRC staff's generic review of the adequacy of electric power systems for operating nuclear power plants. Specifically, the NRC requested all licensees to review the electric power systems at each of their nuclear power plants to determine analytically if, assuming all onsite sources of AC power are not available, the offsite power system and the station electric power system is of sufficient capacity and capability to automatically start as well as run all required safety-related loads. The ANO event demonstrated that degraded voltage conditions could exist on the Class 1E buses even with normal transmission network (grid) voltages, due to deficiencies in equipment between the grid and the Class 1E buses (Offsite/Station electric power system design) or by the starting transients experienced during certain accident events not originally considered in the sizing (design) of these circuits. Information Notice No. 79-04, "Degradation of Engineered Safety Features," (ADAMS Accession No. ML0311801180) provides additional information regarding this event.

The staff recognizes that, for HNP, a deviation from the guidance on degraded voltage protection provided in the NRC letter dated June 2, 1977, was accepted by the NRC in a SER dated February 23, 1995. (See ADAMS Accession No. 9503010126, Item ID 003923542) The degraded voltage protection system configuration for the two HNP units approved in the 1995 SER is inadequate because the degraded voltage relays were set below the minimum required voltage at the component level and do not automatically protect the safety-related equipment during a degraded voltage condition during an accident. The NRC staff has concluded that the NRC erred in accepting this approach since the regulatory requirements of GDC-17 and 10 CFR 50.55a(h)(2) were not met by SNC and no exemption for those requirements was granted by the NRC. Additionally, NRC staff noted that during a meeting with the licensee for HNP (Georgia Power Company) on November 16, 1992, the NRC discussed the operating order in place at HNP to address the concerns originally raised during the NRC Electrical Distribution System Functional Inspection (ADAMS Legacy No. 9109040298). The licensee requested, in letters dated November 22, 1993 (ADAMS Legacy No. 9312030052), and July 1, 1994 (ADAMS Legacy No. 9407070063) a deviation from meeting the staff position regarding automatic protection specified in the 1977 NRC letter. On February 23, 1995, the NRC issued the SER approving the deviation. The NRC has determined that the approval of the deviation does not constitute a de-facto exemption. The requirements for granting an exemption from the requirements in Part 50 of the NRC's regulations are described in 10 CFR 50.12 and the 1995 SER did not meet these requirements.

The staff's position is that the licensee's analysis for HNP must show that the existing setpoints and time delays are adequate to ensure that all safety-related loads have the required minimum voltage measured at the component terminal to start and operate safety-related equipment necessary to mitigate the consequences of the worst-case design basis event (DBE), without any credit for administratively controlled bus voltage levels. This staff position is consistent with regulatory requirements specified in 10 CFR 50.55a(h)(2) and GDC-17. This staff position is also consistent with the guidance provided in Standard Review Plan (SRP), NUREG-0800, (July 1981), Branch Technical Positions (BTPs) of Appendix 8-A (PSB), containing BTP PSB-1, "Adequacy of Station Electric Distribution System Voltages." SRP BTP PSB-1 (ADAMS Accession No. ML052350520), Section B, states that the licensee's analysis must show that the existing setpoints and time delays are adequate to ensure that all safety-related loads are protected and all required safety-related loads have the required minimum voltage at the component terminal to start and run to support a worst-case design basis event without any credit for administratively controlled voltage. In addition, BTP states that the voltage sensors shall automatically initiate the disconnection of offsite power sources whenever the voltage set point and time delay limits have been exceeded. Thus, the staff's position is not a new staff position.

The staff's change in position on the acceptability of relying on manual operator action to demonstrate compliance with the applicable provisions of GDC-17 and 10 CFR 50.55a(h)(2) constitutes backfitting as defined in 10 CFR 50.109(a)(1). As explained in the inspection report dated May 25, 2011, the backfitting action is necessary for compliance with GDC-17 and 10 CFR 50.55a(h)(2) and is consistent with applicable guidance and practices in effect at the time that the NRC staff erroneously approved the use of manual actions for controlling voltages at HNP. The documented evaluation required by § 50.109(a)(4) when the NRC relies upon the compliance exception in § 50.109(a)(4)(i) was provided in an NRC inspection report dated May 25, 2011.

Pursuant to 10 CFR 50.109(a)(4)(i), the compliance exception addresses situations in which “a modification is necessary to bring a facility into compliance with a license or the rules or orders of the Commission, or into conformance with written commitments by the licensee.” In these situations, the NRC has stated that “the licensee has failed to meet known and established standards of the Commission because of omission or mistake of fact.” (50 *Federal Register* 38097, 38103; Sept. 20, 1985). The NRC explained in the 1985 Statement of Considerations for the Backfit Rule that “new or modified interpretations of what constitutes compliance would not fall within the exception and would require a backfit analysis and application of the standard.” *Id.*

HNP’s configuration has been found by the NRC to be an unacceptable means of complying with GDC 17 and 10 CFR 50.55a(h)(2) and therefore HNP must bring its facility into compliance with Commission rules.

The 1995 SER was in error because it was not based on the guiding principle of the NRC position that the sole reliance on manual controls for degraded voltage protection may result in the Class 1E bus voltages being too low for proper operation of safety-related equipment but high enough to prevent separation of the safety buses from the offsite power supply. In such an event, the delay associated with manual actions to start and load the onsite emergency diesel generators may degrade safe shutdown capability. In addition, during degraded voltage conditions, selective protective devices such as fuses and contactors may actuate and de-energize operating equipment. Manual actions may be required to restore these loads to the safety busses. Thus, in the event of a Design Basis Accident coupled with degraded voltage conditions, all safety-related loads may not be able to perform their intended safety functions consistent with HNP accident analysis assumptions. The existing condition is significant because HNP’s operator actions cannot protect the safety-related equipment in a timely manner from the effects of degraded voltage conditions. As a result, it is the NRC position that manual operator actions cannot support accident mitigation capabilities as detailed in HNP safety analyses. The staff acknowledges that manual operator actions to improve degraded voltage conditions are acceptable in certain instances provided that the alarm setpoint is high enough to preclude equipment failures. However, the reliance on manual action to protect the equipment when bus voltages cannot support operation of redundant components is unacceptable to the staff. The NRC erroneously approved this approach in 1995 for one other plant, whose operating license is also held by SNC.

That the licensee has been in compliance with its current license does not change the fact that the license is wrong. When the NRC issued the SER in 1995 that approved manual actions, this approval was an error because, as described above, the NRC-established position on this issue was not appropriately followed by the NRC staff. Thus, SNC has failed to meet a known and established standard of the Commission because of an NRC error (mistake) incorrectly approving the Hatch license amendment, which was inconsistent with NRC guidance and practice in effect at the time of the erroneous NRC approval, and the backfit required by the May 25, 2011, inspection report meets the compliance exception.

Therefore, the staff concludes that issuance of the 1995 SER, approving HNP’s reliance on administrative controls and manual actions to maintain adequate voltage in order to demonstrate compliance with applicable provisions of GDC-17 and 10 CFR 50.55a(h)(2), was an error. These NRC regulatory requirements were in effect at the time of HNP’s implementation of degraded voltage scheme and HNP was not in compliance with these

regulations or the relevant staff position. SNC has neither requested an exemption nor has NRC granted an exemption from complying with these regulations.

2. In the appeal, SNC stated that the NRC recognized in 1995 the appropriateness of plant operator ("manual") action to restore voltage in anticipation of degraded grid voltage conditions to preclude unnecessary automatic separation of the plant from the grid at lower voltages; and that reliance solely on an automatic grid separation function did not allow for correction of degraded grid voltage through manual action. Therefore, restrictive conditions were placed in the Technical Specifications (TS) (approved by the NRC in an SER dated March 3, 1995), reflective of plant configuration and the manual actions.

The NRC agrees that manual actions have been periodically approved, through exemptions per 10 CFR 50.12 or if the manual action was part of the plant license. The NRC position to use automatic actions to afford protection during degraded voltage condition was specifically based on the timely need for protection during certain degraded voltage scenarios. The use of automatic protection does not preclude the use of alarms and manual actions when conditions permit.

With regard to degraded voltage protection, the NRC recognized that it was necessary to provide automatic protection in a timely manner when circumstances do not permit manual actions. For example, Branch Technical Position PSB-1 and later BTP 8-6 (both of NUREG 0800) state that two time delay relays can be selected for the second level (degraded voltage) of undervoltage protection. The first time delay relay is set to warn the operators regarding a sustained degraded voltage condition (alarm function) with a long time delay and the voltage settings are set higher than the required minimum voltage at the terminals of safety-related components. This is to provide sufficient time for operator actions to improve the degraded voltage condition. The second time delay relay is set with voltage settings that automatically protect all safety related equipment if a sustained degraded voltage condition persists with time delay to override voltage sag due to large motor start. With regard to degraded voltage protection at HNP, reliance solely on manual actions would not afford the desired protection as intended by the 1977 letter as well as GL 79-36 and PSB-1.

The NRC issued the 1995 SER to HNP approving the manual actions. As stated earlier, this SER was issued in error. With regard to the TS that requires HNP to maintain the alarm alerting the HNP staff of a sustained degraded voltage condition, the NRC staff believes that the alarm function does not replace the protective function required by 10 CFR 50.55a(h)(2) and the staff position established in the 1977 letter.

3. SNC's position in the appeal is that not accepting manual operator actions for complying with the requirements of GDC 17 and 10 CFR 50.55a(h)(2) constitutes a new interpretation by the NRC staff. The NRC letter of May 25, 2011, references Institute of Electrical and Electronics Engineers (IEEE) Std. 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations," and IEEE Std. 603-1991, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations," in the Regulatory and Technical Evaluations in developing the bases for the backfit. In the appeal, SNC made the following points regarding HNPs conformance to the IEEE standards:

- Both HNP units are committed to IEEE Std. 279-1971, which at Section 4.17 acknowledges the permissible use of manual actions.

- IEEE Std. 603-1991, which was under review for endorsement by NRC at the time the 1995 HNP SER was issued, provides in Section 4.5, explicit criteria for the use of manual actions.
- Though HNP is not committed to IEEE Std. 603-1991 (endorsed by the NRC staff in 1996), Section 4.5 criteria for use of manual action are satisfied by the HNP alternate approach approved in the 1995 SER.
- GDC-17 and 10 CFR 50.55a(h)(2), which references IEEE Std. 279-1971 and IEEE Std. 603-1991, do not expressly prohibit manual actions in all situations and make reference to the use of manual actions for certain situations.
- If IEEE Std. 603-1991 is applied to the degraded grid protective configuration at HNP, the manual actions of operators are taken before the plant conditions for automatic actions are reached.
- For compliance with GDC-17, the 1995 SER credited manual actions by plant operators in a specific band of degraded voltages followed by automatic controls, therefore meeting the intent of IEEE Std. 279-1971 and IEEE Std. 603-1991, which do not prohibit manual actions in all situations.
- Finally, NRC specifically licensed HNP for its current design configuration in provisions and conditions in its TS.

The NRC recognizes that Section 4.17 of IEEE Std. 279-1971 acknowledges the use of manual action and initiation of protection systems by means of manual actions. However, Section 4.1, "General Functional Requirements," of IEEE Std. 279-1971, specifically states that, "The nuclear power generating station protection system shall, with precision and reliability, automatically initiate appropriate protective actions whenever a condition monitored by the system reaches a preset level." Manual initiation as discussed in Section 4.17 is intended to be "in addition to," as backup, and not "in lieu of" the automatic initiation requirement of Section 4.1. (For example, the capability to manually initiate in addition to automatically initiate, a reactor trip, actuate emergency core cooling system (ECCS), or the emergency diesel generator is a requirement for all protective actions.)

IEEE Std. 603-1991, Section 4.0 discusses the requirements for establishing the specific design basis for the design of each system. IEEE 603-1991, Section 6.1 Automatic Control, states that, "Means shall be provided to automatically initiate and control all protective actions except as justified in 4.5. The safety system design shall be such that the operator is not required to take any action prior to the time and plant conditions specified in 4.5 following the onset of each design basis event." Section 4.5 of IEEE Std. 603-1991 establishes the criteria for each action identified whose operation may be controlled by manual means initially or subsequent to initiation. Specifically, Section 4.5.2 requires design basis documentation for manual actions to address the justification for permitting initiation or control subsequent to initiation solely by manual means.

Although SNC has asserted in its appeal that Section 4.5 is satisfied, the NRC has concluded otherwise. Specifically, in the June 2, 1977, letter, the NRC set forth its position that the protective action for degraded voltage be automatic. The NRC has concluded that its previous acceptance of manual actions was an error. Therefore, the justification for manual action prepared in accordance with IEEE 603-1991 Section 4.5.2 or IEEE Std. 279-

1971, Section 4.17 is no longer considered adequate and automatic protective action is required.

The staff also concluded that although GDC-17 and 10 CFR 50.55a(h)(2) do not expressly prohibit manual actions in all situations and make reference to the use of manual actions for certain situations, the NRC's position has been that the protection feature be automatic, which is not being met at HNP. The staff also concluded that the existing degraded voltage setting is too low to automatically protect the safety-related components at all voltage levels.

4. The licensee discusses in the appeal that the current degraded voltage protection configuration at HNP complies with NRC approved TS, GDC-17, and 10 CFR 50.55a. Further, the licensee states that the compliance exception applies when a modification is necessary to bring a facility into compliance with a license or rules or orders of the Commission. For HNP, the NRC specifically approved and licensed its current design configuration. As a consequence, SNC claims that the "compliance exception" of 10 CFR 50.109(a)(4)(i) does not apply to this backfit.

With regard to the TS that requires SNC to maintain the alarm alerting the HNP staff of a degraded condition, the compliance with TS is not relevant to the issues as to whether HNP is in compliance with GDC-17 and 10 CFR 50.55a(h)(2). For the reasons provided in paragraph 1 above, the NRC disagrees with SNC that the compliance exception does not apply to the degraded voltage related backfit at HNP. As stated in paragraphs 1, 2, and 3 above, HNP does not meet the requirements of GDC-17 and 10 CFR 50.55a(h)(2). The NRC staff position, based on deterministic criteria, to afford automatic protection during degraded voltage conditions, was and is applicable to all plants, including HNP. Although the NRC issued SNC an SER in 1995 that approved manual actions, the NRC has determined that this approval was an error because the NRC-established position regarding reliance on manual actions was not appropriately followed by the NRC staff. The 1995 SER does not explain why the staff departed from its position. This silence also supports the NRC's conclusion that the 1995 issuance was an error. Additionally, SNC had not sought and never received an exemption from the relevant requirements in accordance with 10 CFR 50.12. Further, as described above, the requirement for automatic protection as described in IEEE standards (IEEE Std. 279-1971 or IEEE Std. 603-1991) does not constitute a new or revised NRC position.

5. Additionally, in the appeal, SNC commented on the NRC backfit letter that stated that HNP relies on the offsite transmission system operators to assure adequate voltage. SNC suggested that HNP does not rely on the transmission system operators to assure adequate voltage, but instead credit is taken for the onsite HNP licensed operator staff to initiate action to assure adequate voltage.

The NRC acknowledges the comment and concludes that it does not change the NRC position regarding the compliance backfit.

NRC CONCLUSION

In conclusion, the NRC maintains that the backfit per the compliance exception provision of 10 CFR 50.109(a)(4)(i) issued to SNC on May 25, 2011, for its reliance solely on manual controls for degraded voltage protection was appropriate. The current configuration for degraded voltage protection does not meet the requirements of GDC-17 and 10 CFR 50.55a (h)(2). Specifically, SNC does not meet the degraded voltage protection provisions specified in IEEE

Std. 279-1971 or IEEE Std. 603-1991, the NRC letter dated June 2, 1977, NRC GL 79-36 as well as NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," Branch Technical Position PSB-1.