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AUG 11 1987

U.S. Nuclear Regulatory Commission
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Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2 - SURVEILLANCE INSTRUCTION (SI) REVIEW AND REVISION PROGRAM

An inspection of the subject program was conducted by NRC May 26 through June 5, 1987. At the exit meeting, the inspection team leader raised three technical questions identified during the inspection. SQN management committed to provide NRC with TVA's position on these items. This information is provided below.

1. SI-166.40, "Pressurizer PORV and Block Valve Operability Test," has stroke time acceptance criteria of two seconds or less. The inspection team questioned whether this acceptance criteria is adequate for testing while in mode 5 due to the low range of pressures that would be experienced.

   SQN personnel have contacted the valve manufacturer, Target Rock Corporation, and have received verbal confirmation that the valves in question (Model No. 1052020-3) have an acceptance criteria for opening time of less than or equal to two seconds, at any pressure from zero to 2500 psig. Written confirmation of this criteria was provided to SQN in a June 11, 1987 letter from Target Rock Corporation and is on file at SQN.

   Based on the above discussion, we believe that the test method and acceptance criteria provided in SI-166.40 are technically adequate.

2. SI-218.2, "Periodic Calibration of RCP Underfrequency Relays," is a routine test instruction that verifies that the reactor coolant pump (RCP) underfrequency relays pick up within the technical specification frequency and time requirements. The NRC inspection team questioned the technical adequacy of the test acceptance criteria, which requires the outputs of the power supply to be 5 volts dc $\pm$ 5 percent and 18 volts dc $\pm$ 5 percent using an input voltage of 120 volts ac. The inspection team's concern is based on a recommendation in the vendor manual for the relay in question (type SDF-1) that an acceptance check of 5 volts dc $\pm$ 5 percent and 18 volts dc $\pm$ 5 percent over an input range of 70 to 130

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volts ac be applied. The inspection team stated that the range of input voltages should be included in the SI-218.2 acceptance criteria (i.e., the output voltages should be verified using several input voltages ranging from 70 to 130 volts ac).

The described acceptance check is recommended by the manufacturer to verify that the circuits are functioning properly following installation, adjustments, or maintenance and not as a routine check of the underfrequency trip function. The input to the power supply of the unit 2 underfrequency relays is from an uninterruptable power supply that consists of a transformer, a 3-phase rectifier, and an inverter. The inverter maintains a regulated 120 volts ac $\pm$ 2 percent. In addition, the primary power source to the regulated inverter has a backup dc source. As a result, the ac source voltage to the underfrequency relay is very tightly regulated, and the potential for any significant variations in ac input voltage is extremely small. Therefore, if the output voltages meet the accuracy tolerance, the power supply is operating correctly.

Based on the above discussion, we believe that the test method and acceptance criteria provided in SI-218.2 are technically adequate.

3. SI-270.2, "Fuses for Containment Penetration Conductor Overcurrent Protection," describes the inspections that are necessary to determine the operability of fuses for containment penetration conductor overcurrent protection in accordance with Technical Specification 3/4.8.3, "Electrical Equipment Protective Devices." The operability of these fuses will be determined by selection and inspection of a representative sample of each type of fuse on a rotating basis. Each representative sample of fuses shall include at least 10 percent of all fuses of that type at least once every 18 months.

   The NRC inspection team stated that SI-270.2 is technically inadequate in that it does not provide for the addition of any substitute fuses in the 10-percent sample.

   SQN's position on fuse substitution is documented in Administrative Instruction (AI)-16, "Fuse Control," and is summarized below.

   Class 1E Fuses Replacement

   Division of Nuclear Engineering (DNE) Design Standards allow no routine substitution of Class 1E fuses. The blown fuse must be replaced with the exact fuse. When exact replacement fuses are not available, DNE approval must be obtained before use of substitute fuses; and configuration change documentation (design change request [DCR] or field change request [FCR]) must be exercised.

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Non-Class 1E Fuse Replacement and Substitution

DNE Design Standards allow substitution of non-Class 1E fuses; however, the practice at SQN will be to replace fuses with exact replacements as shown on the approved Electrical Fuse Tabulations. Except where noted otherwise in the tables, substitution of non-Class 1E fuses is allowed to be made on an interim emergency basis when an exact replacement fuse is not readily available. Since the substitute fuses listed do not, in most cases, have the same time-current characteristic as the original fuse, an analysis shall be made by DNE within 72 hours to verify that acceptable fault current coordination exists for upstream and downstream devices. An exact replacement fuse must be obtained and installed within 30 days; otherwise, for continued operation, a documented engineering analysis must be performed by DNE for that specific application. If applicable, as in the case where the original fuse is no longer available, the substitute fuse or another fuse judged by DNE to be more suitable for the application will be designated as a permanent replacement through the FCR, engineering change notice process.

NOTE: Authorized Operations personnel can utilize an emergency substitute only in accordance with AI-2 and AI-4 in the event of dangerous emergency conditions (imminent major equipment damage, imminent danger of bodily injury, etc.). This use must be reported to DNE for evaluation before the end of the next regular workday.

As stated above, the practice at SQN is to use exact replacement fuses in both Class 1E and non-Class 1E applications. Any Class 1E substitutions (emergency situation only) are immediately evaluated and permanent replacements designated. Non-Class 1E substitutions are evaluated within 72 hours and remain in place no more than 30 days before a permanent replacement is designated. When a new fuse is designated as a permanent replacement, it is added to SI-270.2 and included in the sampling program.

As can be seen from this discussion, the use of substitute fuses is limited in range as well as in "time in use." Therefore, the omission of these substitute fuses from the 10-percent sampling done in SI-270.2 does not have a significant impact on the fuse reliability program at SQN.

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Based on the above discussion, we believe the sampling method provided in SI-270.2 is technically adequate.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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