UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FIRSTENERGY NUCLEAR OPERATING COMPANY

QUALITY ASSURANCE PROGRAM CONSOLIDATION

DAVIS-BESSE NUCLEAR POWER STATION

DOCKET NO. 50-346

PERRY NUCLEAR POWER PLANT

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated August 19, 1999, and revisions dated October 14 and November 11, 1999, FirstEnergy Nuclear Operating Company (FENOC) submitted a request for approval of a Quality Assurance Program change, characterized as a reduction in commitment under 10 CFR 50.54(a). The change, which includes reductions in commitments, consolidates the existing QA program descriptions for the Davis-Besse Nuclear Power Station (DBNPS) and the Perry Nuclear Power Plant (PNPP) into a single corporate Quality Assurance Program Manual (QAPM). The FENOC QAPM was developed utilizing the guidance of NUREG-0800, "Standard Review Plan (SRP)," 17.3, "Quality Assurance Program Description," the November 6, 1998, NRC Safety Evaluation for the Entergy Operations, Inc. QAPM, and the Quality Assurance Programs for DBNPS and PNPP as described in each facility's Updated Safety Analysis Report.

2.0 PROPOSED CHANGES AT DAVIS-BESSE

The DBNPS Quality Assurance Program, as described in the DBNPS Updated Safety Analysis Report (USAR) Section 17.2, is being replaced by the FENOC QAPM. Once implementation of the FENOC QAPM is complete, the DBNPS USAR Section 17.2 will refer to the FENOC QAPM as containing the Quality Assurance Program description for DBNPS. The proposed changes replace three existing regulatory guides and industry standard clarifications described in DBNPS USAR Table 17.2-1 with revised clarifications. The licensee determined that the revised clarifications are reductions in commitment and submitted them for NRC review and approval pursuant to 10 CFR 50.54(a).

2.1 DBNPS USAR Table 17.2-1, Item 5, Regulatory Guide 1.37 (3/73) and ANSI N45.2.1-1973

The current DBNPS USAR position requires that personnel who perform inspection, examination or testing activities required by ANSI N45.2.1 be qualified in accordance with

Enclosure

ANSI N45.2.6. In lieu of this, the licensee has proposed that personnel who perform cleanliness inspections shall be qualified in accordance with Regulatory Guide 1.8. The proposed DBNPS USAR position "requires that personnel who perform inspection, examination or testing activities required by this Standard be qualified in accordance with ANSI N45.2.6. In lieu of this, personnel who perform cleanliness inspections may alternatively be qualified in accordance with Regulatory Guide 1.8." The proposed clarification would allow cleanliness inspection personnel to be qualified in accordance with either Regulatory Guide 1.8 or ANSI N45.2.6. This change in commitment includes the original NRC recommended ANSI Standard for personnel qualification along with a previously approved alternative to personnel qualifications. This change is acceptable.

2.2 DBNPS USAR Table 17.2-1, Item 9, Regulatory Guide 1.58, Revision 1 (9/80) and ANSI N45.2.6-1978

The current DBNPS USAR position states, "The guidance of Regulatory Guide 1.58 shall be followed as it pertains to the qualifications of personnel who verify conformance of work activities to quality requirements. The qualifications of plant operation personnel concerned with day-to-day plant operation, maintenance, and certain technical services shall conform to Regulatory Guide 1.8." The proposed change exempts personnel from the qualification requirements of Regulatory Guide 1.58 who do not meet the definition of personnel performing inspections, examinations, or tests to ensure conformance of work activities to quality requirements as defined in ANSI N45.2.6-1978. Specifically, the change exempts: (1) document review personnel who do not perform inspections or interpretation functions, and (2) local leak rate test personnel who are certified by a different training program.

10 CFR Part 50, Appendix B, Criterion II states, "The [quality assurance] program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained." The NRC staff has provided further description of its expectations in NUREG-0800, "Standard Review Plan (SRP)". SRP 17.3, Section II.A.5.b states, "Training programs to ensure that personnel achieve and maintain suitable proficiency are to be established and implemented." One acceptable approach to achieve the training requirements is detailed in Regulatory Guide (RG) 1.58 and RG 1.8 that conditionally endorses ANSI N45.2.6-1978, ANSI/ANS-3.1-1981 and ANSI/ANS-18.1-1971 standards. These standards provide an acceptable description of a training program that will provide assurances that 10 CFR Part 50, Appendix B, Criterion II will be satisfied.

The licensee's proposal contains two new categories of personnel who will not be qualified in accordance with RG 1.58. The first category is document review personnel who do not perform inspections or interpretation functions. These personnel only interact with quality activities in administrative functions, therefore, ANSI N45.2.6 is not necessarily applicable. The second category is test personnel utilizing gas test methods for information or data collection activities. These personnel will be qualified by the requirements of Regulatory Guide 1.8. This proposed alternative position is acceptable for DBNPS.

2.3 DBNPS USAR Table 17.2-1, Item 10, Regulatory Guide 1.64, Revision 2 (6/76) and ANSI N45.2.11-1974

The current DBNPS USAR position describes the use of a supervisor to perform design verification. DBNPS proposes to use personnel who contributed to a design as a group design verification participant, as long as they do not verify portions of the design that they contributed or act as chairperson of the group design verification. 10 CFR Part 50, Appendix B, Criterion III states, "The verifying or checking process shall be performed by individuals or groups other than those who performed the original design, but may be from the same organization." The proposed alternative provides the assurance that the design verification process will not be performed or overseen by the individual responsible for the design. The proposed alternative provides reasonable assurance that the requirements of 10 CFR Part 50, Appendix B, Criterion III will be satisfied and is therefore acceptable.

3.0 PROPOSED CHANGES AT PERRY

The PNPP Quality Assurance Program as described in the PNPP USAR Table 1.8-2 and Section 17.2 is being replaced by the FENOC QAPM. Once implementation of the FENOC QAPM is complete, the PNPP USAR Section 17.2 will refer to the FENOC QAPM as containing the Quality Assurance Program description for PNPP. The proposed changes to PNPP USAR Table 1.8-2 revise the degree of conformance associated with three regulatory guides. Also, the proposed changes revise a section in the PNPP USAR Section 17.2 concerning approval authority. The reductions in commitments are the only issues subject to NRC review for Perry.

3.1 PNPP USAR Table 1.8-2

3.1.1 Regulatory Guide 1.37 (Revision 0 - 3/73)

The current PNPP Position states, "For operations, Regulatory Guide 1.37 will be applied to activities comparable in nature and extent to construction phase activities." This proposal contains changes in two areas (1) use of certain materials on stainless steel or nickel based alloy surfaces and (2) personnel qualifications for cleanliness inspections.

The first area of changes applies to Position C.4 of Regulatory Guide 1.37. Position C.4 states, "Chemical compounds that could contribute to intergranular cracking or stress-corrosion cracking (SCC) should not be used with austenitic stainless steel and nickel-base alloys." The proposed change states, "materials such as inks, temperature indicating crayons, labels, wrapping material (other than polyethylene), water soluble materials, desiccants, lubricants, and nondestructive examination penetrant, materials and couplants, which contact stainless steel or nickel-based alloy material surfaces contain no more than trace amounts of lead, zinc, copper, or lower melting alloys or compounds. Maximum allowable levels of water leachable chloride ions, total halogens and sulfur compounds shall be defined and imposed on the aforementioned materials. These materials will be controlled through administrative procedures which are, in part, designed to minimize their effects on intergranular cracking or stress

corrosion cracking." This item is acceptable because the revision more clearly identifies materials that could contribute to intergranular cracking or SCC of austenitic stainless steel.

The second area of changes applies to ANSI N45.2.1, which Regulatory Guide 1.37 endorses. Section 2.4, "Personnel Qualifications," of this standard requires personnel who perform inspections, examinations, or testing activities required by this standard be qualified in accordance with ANSI N45.2.6. The proposed change would allow personnel who perform cleanliness inspections to be qualified in accordance with ANSI N18.1 as an alternate to ANSI N45.2.6. ANSI N18.1 describes the personnel qualifications in sufficient detail in the areas of academic training, experience, training programs, and on-the-job training for personnel who will perform cleanliness inspections. The staff considers the ANSI N18.1 standard as an acceptable alternative to ANSI N45.2.6 for personnel who perform cleanliness inspections. Also, this alternative is reaffirmed in Section 2.1 of this Safety Evaluation for DBNPS.

3.1.2 Regulatory Guide 1.54 (Revision 0 - 6/77)

Currently, PNPP implements Regulatory Guide 1.54 that endorses ANSI N101.4-1972 to activities comparable in nature and extent to the construction phase activities for protective coating. The current implementation does not take any exceptions to Regulatory Guide 1.54. The proposed change delineates a specific protective coating program for an operating nuclear power plant in lieu of ANSI N101.4. The coating program is as follows:

1. FENOC commits to the regulatory position of this Guide with the following clarifications:

a. This Regulatory Guide and its associated ANSI Standard implies that a significant amount of coating work is required at the plant site. Although this is correct for construction sites, the coating work at an operating site generally consists of repair and touchup work following maintenance and repair activities or the initial coating of components such as hangers, supports, and piping during facility modifications. Therefore, in lieu of the full requirements of the Regulatory Guide and ANSI N101.4, FENOC shall impose the following requirements:

1. The quality assurance requirements of Section 3 of ANSI N101.4 applicable to the coating manufacturer shall be imposed on the coating manufacturer through the procurement process.

2. Coating application procedures shall be developed based on the manufacturer's recommendations for application of the selected coating systems.

3. Coating applicators shall be qualified to demonstrate their ability to satisfactorily apply the coatings in accordance with the manufacturer's recommendations.

4. Quality control personnel shall perform inspections to verify conformance of the coating application procedures. Section 6 of ANSI N101.4 shall be used as guidelines in the establishment of the inspection program.

5. Quality control personnel shall be qualified to the requirements of Regulatory Guide 1.58 (revision 1).

6. Documentation demonstrating conformance to the above requirements shall be maintained.

b. The requirements of Position A of this Guide apply to surfaces within containment with the following exceptions:

1. Surfaces to be insulated.

2. Surfaces contained within a cabinet or enclosure.

3. Repair/touchup areas less than 30 square inches or surface areas such as: cut ends; bolt heads, nuts and miscellaneous fasteners; and damage resulting from spot, tack or arc welding.

4. Small items such as small motors, handwheels, electrical cabinets, control panels, loud speakers, motor operators, etc., where special painting requirements would be impracticable.

5. Stainless steel or galvanized surfaces.

6. Banding used for insulated pipe.

2. FENOC commits to the requirements of ANSI N101.4-1972 for activities comparable in nature and extent to construction phase activities as modified by the commitment to Regulatory Guide 1.54.

The alternative list of requirements has been determined to be acceptable because the technical requirements are sufficient for an operating plant that requires a low volume coating program.

3.1.3 Regulatory Guide 1.94 (Revision 1 - 4/76)

The current PNPP Position states, "For operations, Regulatory Guide 1.94 will be applied to activities comparable in nature and extent to construction phase activities." The regulatory guide endorses the use of ANSI N45.2.5. ANSI N45.2.5, Section 2.2,

"Procedures and Instructions," requires that installation, inspection, and test procedures for structural concrete and structural steel be maintained current with the latest information. The proposed change states, "procedures for these activities shall only be reviewed or updated prior to commencing the activity. The procedures for structural concrete and structural steel installation, inspection, and testing activities will be developed using the provisions of ANSI N45.2.5-1974. While the proposed alternative makes no assurances of continually maintaining the procedures with the latest information, the alternative will be reviewed prior to use based on the latest information. There is no safety benefit in updating these procedures with the latest information if the procedures will not be used before the latest information is superseded with additional recent information. The alternative ensures that installation, inspection, and test procedures for structural concrete and structural steel will be reviewed and updated prior to implementation which is the intent of procedure review. This proposed alternative position is acceptable for nuclear power plants during their operations phase.

3.2 PNPP USAR Section 17.2

3.2.1 PNPP USAR Section 17.2.3.2, "Requirements" (Design Control)

The current PNPP USAR Section 17.2.3.2 names the Manager of the Quality Assurance Section as responsible for the quality assurance program. With this responsibility, the manager has final approval authority for any changes to the program. The proposed change states, "The individual responsible for quality assurance has overall authority and responsibility for establishing, controlling, and verifying the implementation and adequacy of the quality assurance program as described in this QAPM." Another part of the proposed change states, "Revisions of controlled documents are reviewed for adequacy and approved for release by the same organization that originally reviewed and approved the documents or by a designated organization that is qualified and knowledgeable." The proposed alternative contains the use of a generic organizational position title that denotes the position function, supplemented by descriptive text. Also, the proposed alternative contains organizational revisions that ensure that persons and organizations performing quality assurance functions continue to have the requisite authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations. The proposed change is acceptable because it is not a reduction in commitment according to 10 CFR 50.54(a)(3)(iii) and 10 CFR 50.54(a)(3)(vi).

4.0 CONCLUSION

The changes consolidate the existing QA program descriptions for the Davis-Besse Nuclear Power Station and the Perry Nuclear Power Plant into a single corporate Quality Assurance Program Manual (QAPM). Based on the review of the FENOC QAPM as revised by letters dated October 14 and November 11, 1999, the staff concludes that the QAPM submitted by FENOC is acceptable in that the reductions in commitments satisfy the review guidance provided in NUREG-0800, "Standard Review Plan," Section 17.3 and the regulatory requirements in 10 CFR Part 50, Appendix B.

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