

November 9, 2001

MEMORANDUM TO: Steve Dembek, Section Chief
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Brian E. Thomas, Acting Section Chief */RA/*
Balance Plant Section
Plant Systems Branch
Division of Systems Safety and Analysis
Office of Nuclear Reactor Regulation

SUBJECT: SAN ONOFRE PLANT, UNITS 2 AND 3 - TECHNICAL SPECIFICATION
AMENDMENT REGARDING THE VENTILATION FILTER TESTING
PROGRAM (TAC NOS. MB1557 & MB1558)

Attached is a safety evaluation report (SER) prepared by the Plant Systems Branch (SPLB) for the technical specification (TS) amendment for the San Onofre nuclear generating station, Units 2 and 3. The proposed change would revise a portion of the TS regarding the ventilation filter testing program for the control room emergency air cleanup system and the fuel handling building post-accident cleanup filter system. The licensee requested to change the reference to the ASME Code for the ventilation filter testing program to ANSI N510-1975 from ASME N510-1989. The staff has completed its review of the licensee's submittals and concludes that the proposed change to the TS is acceptable. The staff's basis for the conclusion is addressed in the attached SER.

We consider our effort on TAC Nos. MB1557 and MB1558 to be complete.

Docket Nos.: 50-361
50-362

CONTACT: J. S. Guo, SPLB/DSSA/NRR
(301) 415-1816

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SAFETY EVALUATION BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
PLANT SYSTEMS BRANCH
TECHNICAL SPECIFICATION CHANGES REGARDING
VENTILATION FILTER TESTING PROGRAM
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3
DOCKET NOS. 50-361 and 50-362

1.0 INTRODUCTION

By letters dated March 21, 2001, (for Amendment Application Nos. 202 and 187), and October 24, 2001, (for Supplement 1), the Southern California Edison Company (licensee) requested an amendment to technical specification (TS), Section 5.5.2.12, "Ventilation Filter Testing Program (VFTP)," for the San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS 2-3). Specifically, the licensee proposed to change the reference to the ASME Code in TS Subsections 5.5.2.12.a and 5.5.2.12.b from ASME N510-1989 to ANSI N510-1975. The licensee stated that the change is required to ensure clarity of the methodology used in testing the high efficiency particulate air (HEPA) filters for the control room emergency air cleanup system (CREACUS) and the fuel handling building post-accident cleanup (PACU) filter system. TS Section 3.7.11, "Control Room Emergency Air Cleanup System," and TS Section 3.7.14, "Fuel Handling Building Post-Accident Cleanup Filter System," require the CREACUS and PACU filters to be tested in accordance with the VFTP. TS Section 5.5.2.12 requires that certain aspects of the filter testing in the VFTP shall be in accordance with Regulatory Guide (RG) 1.52, Revision 2 and ASME N510-1989. Currently, the filters of the CREACUS units are tested in accordance with ANSI N510-1975.

ANSI N510-1975 was the standard in place at the time of initial licensing of SONGS 2-3. The plant's TS issued with the original operating licenses were amended over the years. In its TS amendment of 1996 for converting the current TS into an improved standard TS (ISTS), the licensee changed the laboratory testing method for the carbon samples from the charcoal adsorbers of the ventilation systems from ASTM D3803-1979 to ASTM D3803-1989. ASTM D3803-1989 provides specific guidance for the testing of charcoal filters using Dioctyle Phthalate (DOP). The licensee also changed the in-place testing standard for the HEPA filters from ANSI N510-1975 to ASME N510-1989. NRC Generic Letter (GL) 99-02 recommends the plant's TS to adopt the ASTM D3803-1989 method for the charcoal filter laboratory testing, but does not recommend the TS to adopt the ASME N510-1989 standard at that time for the HEPA in-place filter testing. Therefore, the original change of the test standard to ASME-1989 from ANSI-1975 was not based on the NRC's recommendation.

ANSI N510-1975 describes the methods for the field testing of the nuclear air cleaning systems. The standard provides the basis for establishing that air flow and air flow characteristics of the

system are adequate to achieve the desired air cleaning function and there is no bypass or leak which could compromise the desired function. The standard was developed under the cognizance of American National Standards Committee (N45) on nuclear reactor plants with the American Society of Mechanical Engineers (ASME) as secretariat. The standard was approved by the American National Standards Institute (ANSI) on June 19, 1975, and designated as ANSI N510-1975.

ASME N510-1989 covers the requirements for the field testing of engineered safety feature (ESF) and other high efficiency air-cleaning systems for nuclear power plants and other nuclear applications. This standard is a later version of ANSI N-510-1975 developed by the American National Standard Committee (N45). The Standard's Committee N45 was subsequently reorganized into the ASME Committee on Nuclear Air and Gas Treatment (CONAGT) and the ASME Nuclear Codes and Standards Committee. Therefore, the ANSI N510 standard was revised and then changed to ASME N510 standard in its second edition. The second edition of the standard was approved by the ANSI on March 20, 1980. The third edition of the standard (ASME N510-1989) updated the standard to incorporate technical inquiries, corrections, and state-of-the-art improvements as part of the ANSI required 5-year review. ASME N510-1989 was approved by the CONAGT and the ASME Board on Nuclear Codes and Standards and was subsequently approved by the ANSI on October 3, 1989.

2.0 EVALUATION

The licensee requested to change the reference to the ASME Code in TS Subsections 5.5.2.12.a and 5.5.2.12.b from ASME N510-1989 to ASME N510-1975. Currently, the HEPA filters of the CREACUS units are tested to the ANSI N510-1975 standard, but the TS requires it to conform to the ASME N510-1989 standard. The licensee was aware of the discrepancy between TS requirements and the actual testing performed and, therefore, requested a TS change. In conference calls with the licensee on June 4, and 6, 2001, the staff asked the licensee how would the testing in accordance with the N510-1975 standard satisfy the scope and intent of the N510-1989 standard and what exemptions would be needed if the test is conducted following the N510-1989 standard and without major changes to the plant procedures. In its response dated June 7, 2001, the licensee submitted a proposed ventilation filter testing program for testing the HEPA filters in accordance with the ASME N510-1989 standard and requested the following exceptions:

- A qualified downstream sample point as specified in the VFTP may be submitted for the manifold or sample point downstream of a fan as required by ASME N510-1989.
- For the CREACUS, the alternate shroud method as described in ANSI N510-1975 may be submitted.
- References to ANSI N510-1975 in RG 1.52, Rev. 2, will be interpreted as the reference to ASME N510-1989 instead.
- The frequency of testing shall be once per 24 months.

The licensee also stated that the above exceptions to ASME N510-1989 stand alone and no commitment is made to other sections of the ASME N510-1989 standard. The staff reviewed the licensee's proposal and found that the licensee's commitment to adopt a portion of the ASME N510-1989 standard is not acceptable. The licensee must either commit to the ASME N510-1989 standard or commit to the ANSI N510-1975 standard, in whole, for testing the

HEPA filters. In a letter dated October 24, 2001, the licensee submitted Supplement 1 to Amendment Application No. 202 to Facility Operating License NPF-10 and Amendment Application No. 187 to Facility Operating License NPF-15 for SONGS 2-3.

In Supplement 1 to the TS amendment, the licensee decided to continue using the ANSI N510-1975 standard with the following reasons:

- Testing the entire bank would require performing an air-aerosol mixing uniformity test, that would require an extensive back-fit of a distribution plenum to enable this testing. The test was found unnecessary since the existing system and test methods adequately demonstrate system operability.
- The original startup tests used the methodology outlined in the ANSI N510-1975 standard to qualify the test method. The post-accident cleanup (PACU) filter units were qualified to and are tested to ANSI N510-1975.
- The new methods specified in ASME N510-1989 would require installation of new equipment and qualification of new test points which are currently not part of the SONGS design. Deviating from the ANSI N510-1975 Standard would require procedure changes and re-training of staff.
- The testing is currently performed according to the ANSI N510-1975 standard. The change reflect the established plant practice in testing HEPA filters for CREACUS and PACU units.

Based on this review, the staff finds that the N510-1989 standard does not have the “alternate shroud test.” The shroud method was omitted from N-510-1980, and the later version of N510-1989, since it was no longer necessary as the high DOP generation rate needed for the units with high flow rate had become available. The licensee currently tests the CREACUS units HEPA filters in accordance to the N510-1975 standard with alternate shroud test. The alternate shroud test is the in-place testing of the bank by shrouding individual filters (or groups of filters) in the bank and subjecting only that portion of the bank to the DOP test at one time. As each section of the bank is shown to be satisfactory, the shroud is moved from filter to filter until all the filters in the bank are tested. The shroud is designed so that the total filter (or group filters), including the gaskets, are subject to test. The licensee stated that the DOP leak test methodology satisfies the requirements of N510-1975. The plant continues to use the more conservative N510-1975 standard, which test individual filters (or groups of filters), as opposed to testing the entire bank permitted by the N510-1989 standard. If all the filters in the bank pass the 0.05% acceptance criterion, the entire bank should pass the 0.05% criterion.

The staff’s review finds that based on the fact that both methods use the same acceptance criteria, the N510-1975 standard is reliable for the testing. Therefore, the staff finds the licensee’s proposed TS change acceptable.

3.0 CONCLUSION

On the basis of its review, the staff concludes that the licensee’s proposed TS change is acceptable. The bases for the approval are that:

1. Regulatory Guide 1.52, (Revision 2) "Design, Testing, and maintenance Criteria for Post-Accident ESF Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," specifies testing of the HEPA filters to conform to the ANSI N510-1975 standard.

2. Currently, there is no requirement for licensees to adopt ASME N510-1989.

Therefore, the staff finds the licensee proposed TS acceptable.