

V.C. Summer Nuclear Station
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Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Serial No. 24-023
VCS-LIC/JB R0
Docket No. 50-395
License No. NPF-12

DOMINION ENERGY SOUTH CAROLINA (DESC)
VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
10 CFR 21 REPORT
EMERGENCY DIESEL GENERATOR FUEL OIL PIPING

Dominion Energy South Carolina hereby submits the enclosed updated written notification of the identification of a defect, in accordance with the requirements of 10 CFR 21.21(d)(3)(ii). This notification pertains to the Emergency Diesel Generator fuel oil piping at VCSNS.

Should you have any questions, please call Mr. Michael Moore at (803) 345-4752.

Sincerely,

A handwritten signature in blue ink that reads "Robert L. Justice". The signature is stylized and includes a large loop at the end.

Robert L. Justice
Site Vice President
V.C. Summer Nuclear Station

Enclosure

Commitments contained in this letter: None

cc:

G. J. Lindamood – Santee Cooper
L. Dudes – NRC Region II
G. Miller – NRC Project Mgr.
NRC Resident Inspector
J. N. Bassett – INPO
Marsh USA, Inc.

**10 CFR 21 Report
Emergency Diesel Generator Fuel Oil Piping**

**Dominion Energy South Carolina
Virgil C. Summer Nuclear Station Unit 1**

10 CFR 21 REPORT

Emergency Diesel Generator Fuel Oil Piping

1. Name and address of the individual or individuals informing the Commission.

James Holloway
Vice President, Nuclear Engineering & Fleet Support
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

2. Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which contains a defect or noncompliance.

V.C. Summer Nuclear Station
Docket No. 50-395
License No. NPF-12
Basic Component: Emergency Diesel Generator (Colt-Pielstick 12-Cylinder PC-2.2)
On-Engine Fuel Oil Piping

3. Identification of the firm constructing the facility or supplying the basic component which contains a defect or noncompliance.

Fairbanks Morse Defense
Engine Manufacturing
701 White Avenue
Beloit, WI 53511

4. Nature of the defect or noncompliance and the safety hazard which is created or could be created by such defect or noncompliance.

The original equipment manufacturer did not provide VCSNS adequate documentation for an exception to ASME Code, Section III, Class 3 for the on-skid EDG fuel oil system. Specifically, the on-skid fuel oil threaded piping design used a code-allowed exception without providing adequate evaluation documentation supporting threaded Schedule 40 piping.

Specifically, the design specification from the vendor did not include documented assessment of the design of the fuel oil piping to withstand stresses experienced during normal operation of the diesel generators.

Analysis of the November 2022 fuel oil piping failure during routine testing determined it was caused by high-cyclic (vibratory) fatigue. The failed pipe nipple had been in service for 8 years, with an actual runtime of less than 1000 hours. Both VCS Emergency Diesel

Generators have operated within their design vibration frequency and have fuel oil piping in the manufacturer's design configuration. The low margin of the threaded Schedule 40 piping design has proven inadequate for operation and maintenance.

5. The date on which the information of such defect or noncompliance was obtained.

October 26, 2023

6. In the case of a basic component which contains a defect or noncompliance, the number and location of all such components in use at, supplied for, or being supplied for or may be supplied for one or more facilities or activities subject to the regulations in this part.

There are two (2) Emergency Diesel Generators at V.C. Summer with fuel oil systems impacted by this condition. Affected systems supplied to other licensees is not known to V.C. Summer.

7. The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

The subject fuel oil piping is being re-designed and re-analyzed under a design modification performed by Dominion Energy, with implementation scheduled for Spring 2024. The modification will use heavier wall piping with additional piping supports as required by piping analysis. The station has bridging strategies in place until implementation of the design change.

8. Any advice related to the defect or noncompliance about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

None.

9. In the case of an early site permit, the entities to whom the early site permit was transferred.

Not applicable, does not involve an early site permit.