

V.C. Summer Nuclear Station  
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DominionEnergy.com



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U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Serial No.: 22-096  
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 – FEEDWATER ISOLATION VALVE POPPET SEAL FAILURE**

Dominion Energy South Carolina hereby submits the enclosed 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 failure of a poppet seal used in a safety-related application on the control block of feedwater isolation valves (FWIV) at VCSNS.

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

Sincerely,

A handwritten signature in black ink, appearing to read "George Lippard", written in a cursive style.

George Lippard  
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**

**Feedwater Isolation Valve (FWIV) Poppet Seal Failure**

10 CFR 21 REPORT  
FWIV POPPET SEAL FAILURE

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

George A. Lippard  
Site Vice President  
V.C. Summer Nuclear Station  
Mail Code 800  
PO Box 88  
Jenkinsville, SC 29065

**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: Feedwater Isolation Valve Control Block Poppet Seals

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

Dominion Energy South Carolina  
V.C. Summer Nuclear Station  
PO Box 88  
Jenkinsville, SC 29065

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

It was determined that the poppet seal failure was the result of laminations in the Viton material from which the seals are machined. The poppet seals are purchased Commercial Grade and dedicated for use in a Safety-Related application on the FWIVs.

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

June 22, 2021

**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.**

VC Summer SKU 30-8091-0920-13, Feedwater Isolation Valve Poppet Seal, is unique to the VC Summer Feedwater Isolation Valves. The poppet seals were designed and manufactured specifically for application in the VC Summer Feedwater Isolation Valves. There are no other applications of these particular seals in the nuclear industry.

The laminations were identified via microscope inspection in a single batch of poppet seals during a post failure investigation. These seals were manufactured in May 2017 by Infinity Seal of Columbia, South Carolina. Infinity Seal is a commercial grade supplier. VC Summer performs Commercial Grade Dedication of the seals onsite.

VC Summer received two shipments, under two different Purchase Orders, that contained poppet seals. In May 2017 VC Summer received 60 seals (VC Summer Lot Number 7064051). In May 2021 VC Summer received 5 additional seals (VC Summer Lot Number 7081558) from the impacted batch manufactured in May 2017.

At this time there are no other seals from Lots 7064051 and 7081558 installed or in inventory at VC Summer, and none have been delivered to any other facility.

VC Summer performs the Commercial Grade Dedication of these poppet seals. VC Summer does not perform Commercial Grade Dedication of these poppet seals for any other facility.

**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.**

All poppet seals from Lots 7064051 and 7081558 have been removed from the Feedwater Isolation Valves and from warehouse inventory. All other Lots onsite have undergone additional testing to ensure that laminations are not present in the qualified seals currently in inventory.

Additionally, Plant Support Engineering is working with the Supply Chain Management to identify the appropriate additional testing and/or inspection to ensure future procurements of Feedwater Isolation Valve poppet seals are free of laminations.

**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. The affected seals were purchased commercial grade and dedicated onsite to be used in safety-related application in the FWIV control block application at VCSNS.

**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.