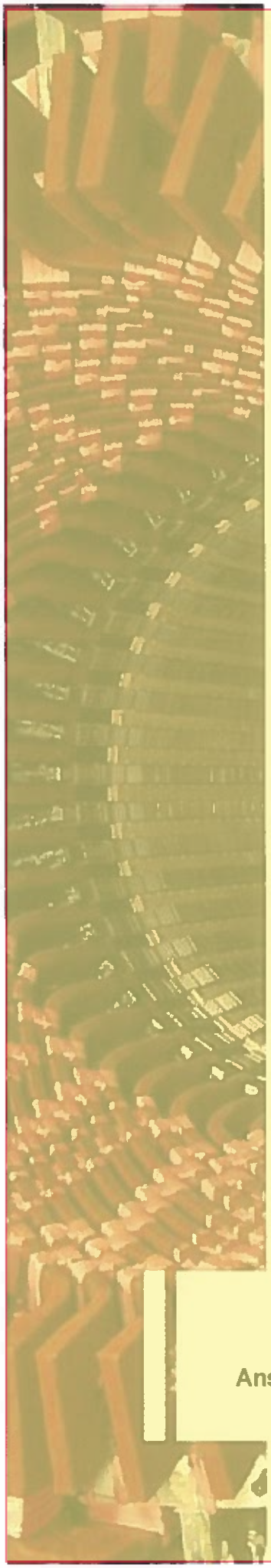
Docket No. 20210001-EI
Cross-Examination
Hearing Exhibit

Exhibit No.: 6C

Proffered by: Public Counsel

Short title: DEF's Confidential Response to OPC's POD 5, Q22

Witness(s): Gary P. Dean
Joseph Simpson



Product Bulletin

Generator, Stator Core Seals, Inspection and Replacement, SGen5-1000A and SGen6-1000A

PB3-13-0008-GN-EN-01

Supersedes PB2-08-5038-GN-EN-01

Generator

Answers for energy.

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AL: N; ECCN: EAR99 // 2-11-020556-02

SIEMENS

Product Bulletin: PB3-13-0008-GN-EN-01 March 15, 2013

Title: Generator, Stator Core Seals, Inspection and Replacement, SGen5-1000A and SGen6-1000A

SUMMARY

The function of the core seals is to act as barriers that separate the generator into nine separate cooling zones. Core seals have been found displaced and/or torn within some SGen5-1000A and SGen6-1000A generators during operation. Siemens recommends performing visual inspection and replacing displaced core seals.

This bulletin supersedes Product Bulletin PB2-08-5038-GN-EN-01 *Inspection of Core Seals of SGen5-1000A (118/46 and 118/55)* issued on April 6, 2009 for those units that have been affected by that bulletin.

Equipment Type:	Generator - SGen5-1000A and SGen6-1000A
Priority:	At all Medium and Major Inspections
Required Plant Condition:	Shutdown Off turning gear
Parts Required:	Open/ close parts, core seal replacement kit
Parts Modification / Repair Required:	None
Controls Modification:	None
Special Tools Required:	Yes

BACKGROUND

The function of the core seals is to act as barriers that separate the generator into nine separate cooling zones.

Figures 1 and **2** show the locations of the core seals in relation to the overall generator. The seals are located in 10 places; each seal is 360 degrees around the stator core.

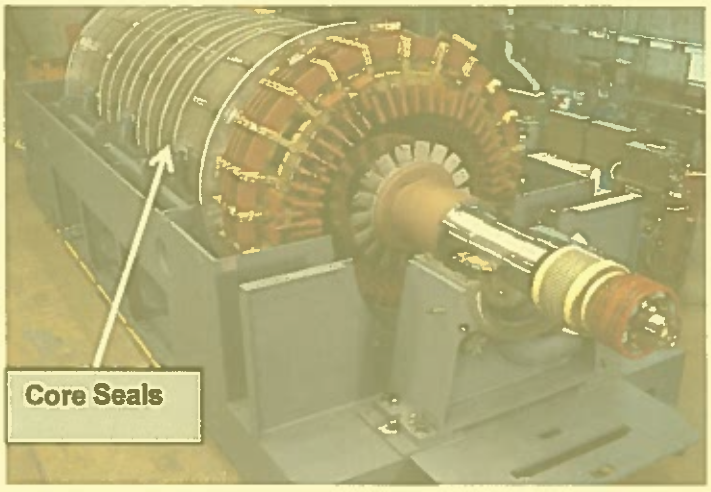

Figure 2: Photo of Generator with Upper Frame Removed.

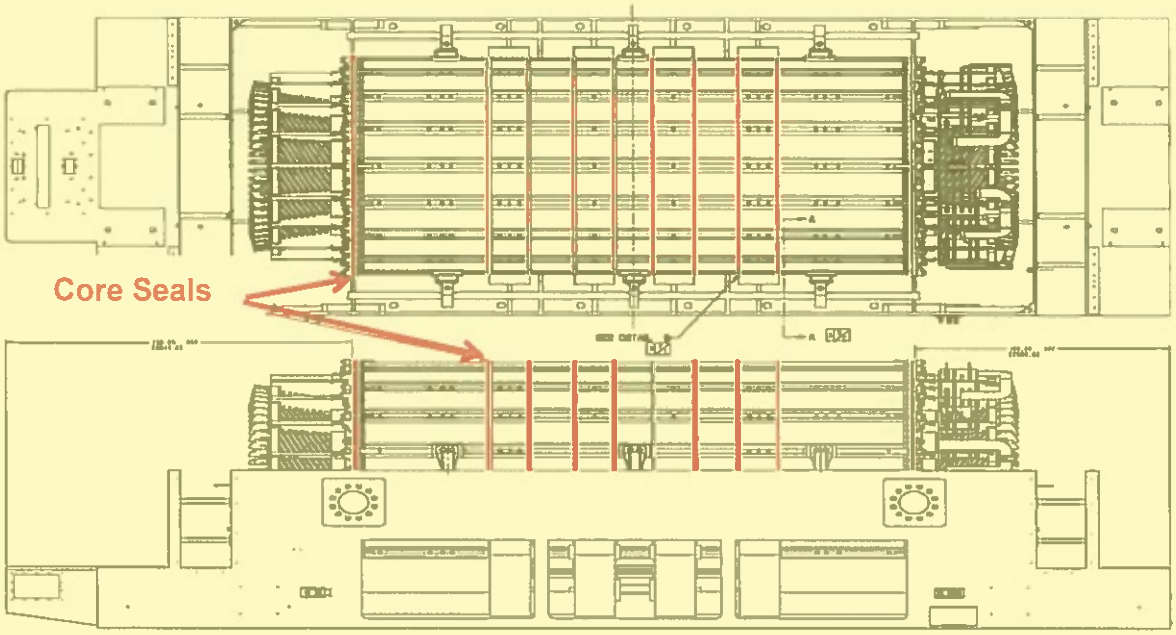

Figure 1: Location of Core Seals (Core seals are represented by the red lines).

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Figure 3 shows the original design core seals that are comprised of grey silicone sponge and adhere to the stator core. Core seals have been found displaced and/or torn within some SGen5-1000A and SGen6-1000A generators.

Figure 3: Original Core Seal Design.

Fleet experience has shown that because the bond strength between the silicone sponge seals and resin-covered core can vary over the circumference of the generator frame under certain operating conditions, there is a potential for seal displacement to occur. Displaced seals cause a reduction in cooling efficiency which could lead to a reduction in rating:

- For most units that do not operate at maximum capability, the risk of operating with displaced seals is low.
- Units operating at maximum capability could experience a reduction in rating in some operating conditions. These units could reach alarm limits on the stator winding resistance temperature detectors (RTDs), leading to a reduction in rating.

Figure 4: Improved Core Seal Design.

Siemens has developed an improved core seal design which is comprised of silicone rubber that will adhere to the stator frame (see **Figure 4**). The improved seal design reduces the risk of seal displacement because a reliable bond is formed between the seals and the steel frame rings. Extra seal rigidity is provided by the long extension legs in the seal, which extend around the steel plate allowing greater bonding surface area.

Replacement of displaced core seals will restore the overall cooling efficiency of the generator.

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RECOMMENDATIONS

Siemens recommends performing visual inspection of core seals at all medium and major inspections. For inspection, the interior of the generator can be accessed through four upper frame covers and two cooler access covers.

Undamaged seal material of original design is adequate for operation. It is recommended to leave existing seals installed in the unit if they are found secured in place.

It is recommended that replacement of core seals be implemented by Siemens authorized personnel only. Please contact your Siemens representative for further information.