

NUKLEARNA ELEKTRARNA KRŠKO

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IN-SERVICE INSPECTION OF STEAM GENERATOR TUBES

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure is intended to determine in-service inspection of replacement steam generator tubes.

1.2 Scope

This procedure defines the scope and the frequency of examinations throughout the service life of replacement steam generators.

2.0 REFERENCES

2.1 NEK Technical Specifications SR 3.4.5.2 and SR 3.4.5.3

2.2 EPRI PWR SG Examination Guidelines: TR-107569

2.3 NEK Procedure ISI-4.301 General Procedure for Eddy Current Inspection of Steam Generator Tubes

3.0 RESPONSIBILITIES

This procedure (including any revision) is subject to URSJV approval. Procedure effective date shall be determined as the date of URSJV approval.

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4.0 DEFINITIONS AND ABBREVIATIONS

4.1 Definition

N/A

4.2 Abbreviations

-

URSJV

:

Uprava Republike Slovenije za jedrsko varnost

-

EPRI

:

Electric Power Research Institute

-

EFPM

:

Effective Full Power Month

-

RFO

:

Refueling Outage

-

MRPC

:

Motorized Rotating Pancake Coil

-

Bobbin

:

Bobbin ET inspection coil

-

TW

:

Tube Wall

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5.0 INSTRUCTIONS

5.1 First Inspection

After the first cycle of operation (a duration not less than 6 EFPM and not more than 24 calendar months of SG service) a 100% full length (tube and to tube end) examination using Eddy Current bobbin probes* shall be performed on both Steam Generators.

NOTES: * For examination of low row U-bands MRPC probe shall be used.

Applicable Eddy Current techniques are described in the procedure ISI-4.301 (Ref. 2.3), in general use of different probes and techniques shall be in accordance with last revision of ref. 2.2 used for preparation of NEK's SG Assessments.

5.2 Subsequent Inspections

If the steam generators exhibit C-1 condition (From Ref. 2.1) 50% of the tubes shall be inspected in each steam generator every 2nd RFO.

The tube sample shall be selected on a systematic basis: each 2nd column (or each 2nd two columns or some other systematic pattern) shall be examined at RFO and remaining columns shall be examined at the subsequent RFO. Additionally, the sample shall include all tubes having previously recorded indications 20% TW.

In the event of C-2 and C-3 results (See Ref. 2.1) proceed in accordance with the requirements of SR 3.4.5.2 and SR 3.4.5.3 (Ref. 2.1).

6.0 APPENDICIES

N/A