



University of Tehran
High Voltage Laboratory

Test Report

No: 96H062

50 kVA Distribution Transformer
Iran Transfo Rey Co.





Test Report No 96H062

Test Object: 50kVA distribution transformer

Type: TSUN4744L

Serial Number: 362866

Manufacturer: Iran Transfo Rey Co. (Islamic Republic of Iran)

Test Performed on order of: Iran Transfo Rey Co. (Islamic Republic of Iran)

Test Scope: Short-time withstand current test

Tests Procedure: According to standard IEC 60076: Power transformers
Part 5: Ability to withstand short circuit

Test Performed: December 26, 2017

Test Result: Indicated in Report
The test result refers to the tested object only.



Short-time withstand current test on 50kVA distribution transformer- S/N:362865
Iran Transfo Rey Co. production



High Current Laboratory Participants:

Test assistants:

M. H. Samimi

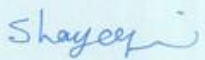
H. Dadashi

Test Leader



S. Mohseni

Head of Laboratory:



A. A. Shayegani Akmal



Tehran, 23 April 2018

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This Report contains, 12 numbered pages

4 photos

1 drawing

15 oscillograms

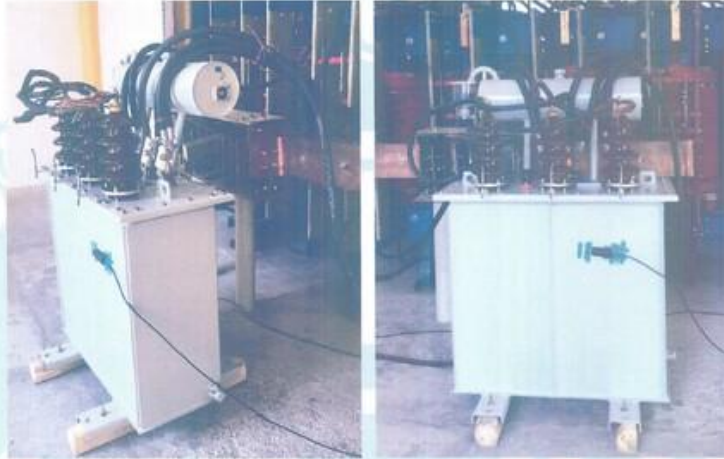


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1. Description of test object

The test object was 50kVA distribution transformer, manufactured by Iran Transfo Rey Co. (Iran).



2. Scope of tests agreed upon

The accepted testing method was conforming to international standard "IEC 60076: Power Transformers-Part 5: Ability to withstand short circuit"

3. Short-time withstand current test

This arrangement was composed of a high current transformer, time controlled switch and a proper capacitor bank. The scheme is shown on Figure 1. The transformer under test has been supplied with 1810 A current for 0.5 S and the current has been measured.

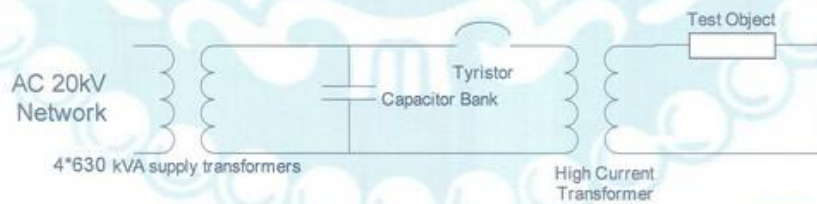


Figure 1: Scheme of short-time withstand current test

The total number of tests was nine; three tests in each tap position. Current waveforms are shown in figures 2 to 10.

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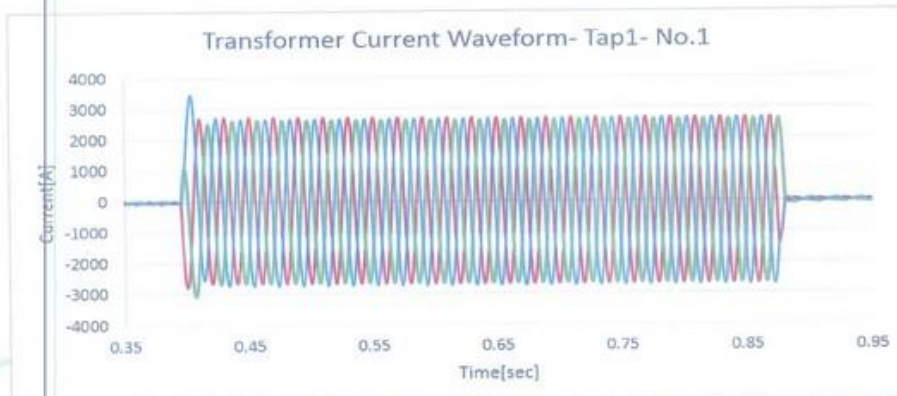


Figure 2: Current waveform, Tap1, No.1

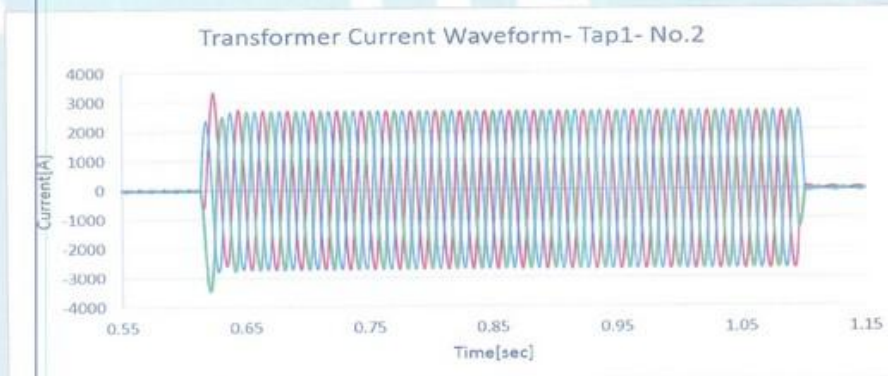


Figure 3: Current waveform, Tap1, No. 2

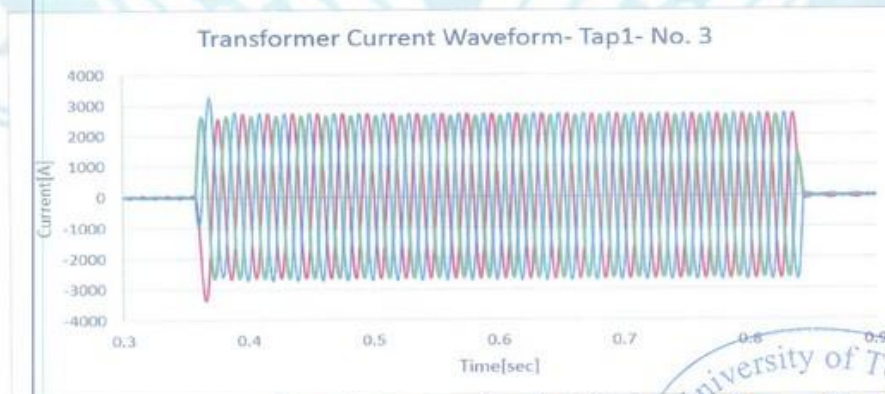


Figure 4: Current waveform, Tap1, No. 3

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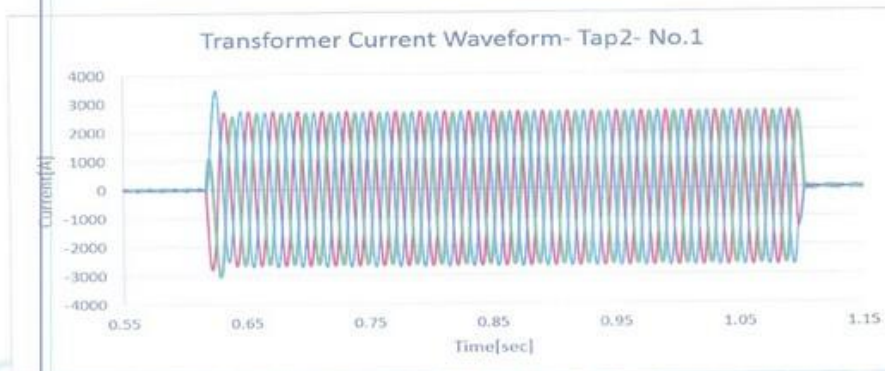


Figure 5: Current waveform, Tap2, No. 1

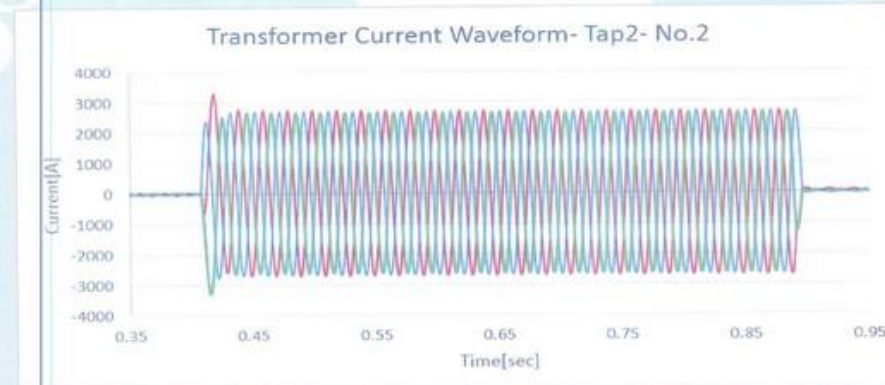


Figure 6: Current waveform, Tap2, No. 2

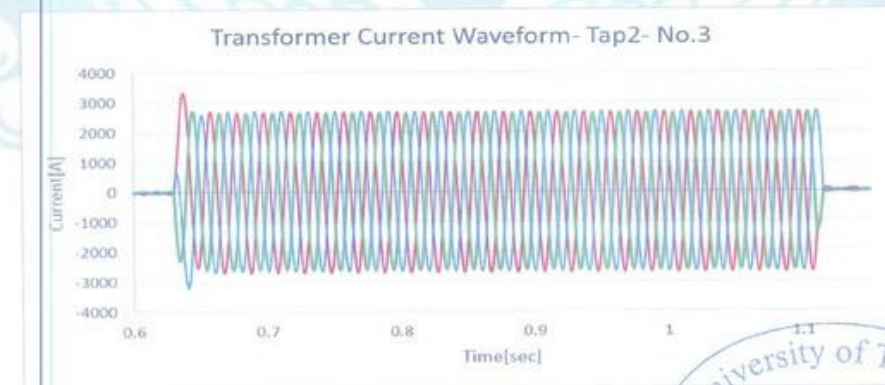


Figure 7: Current waveform, Tap2, No. 3



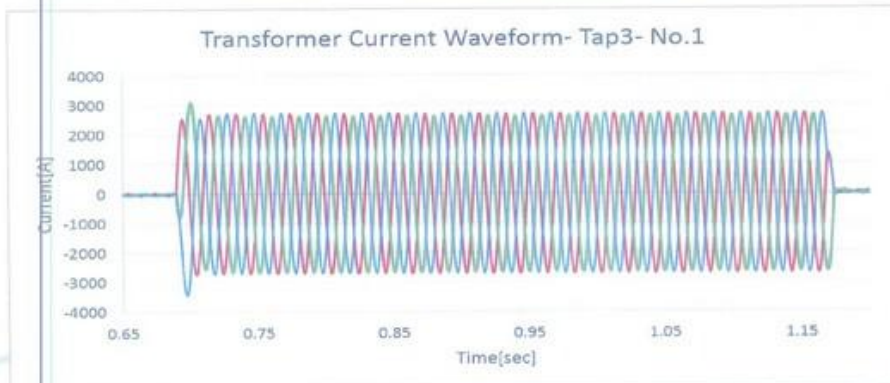


Figure 8: Current waveform, Tap3, No. 1

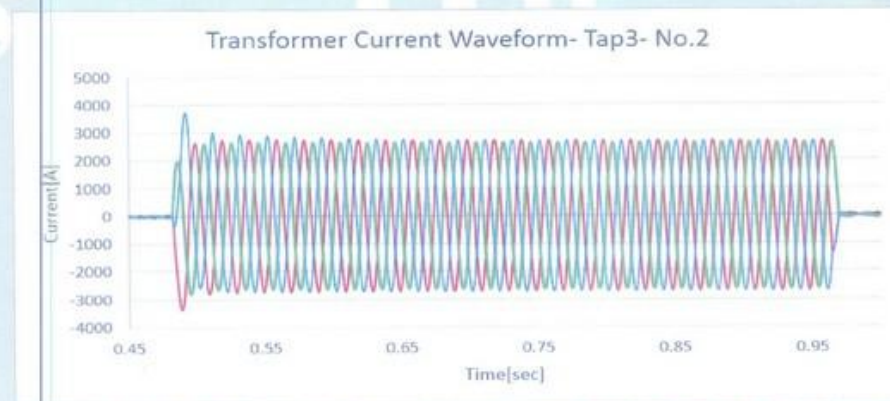


Figure 9: Current waveform, Tap3, No. 2

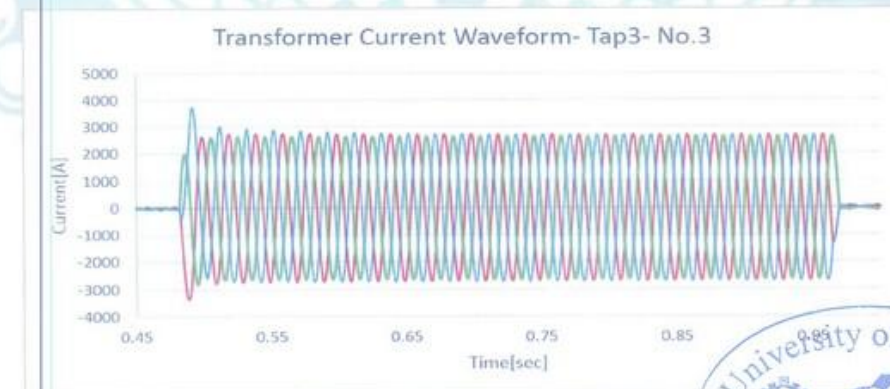


Figure 10: Current waveform, Tap3, No. 3

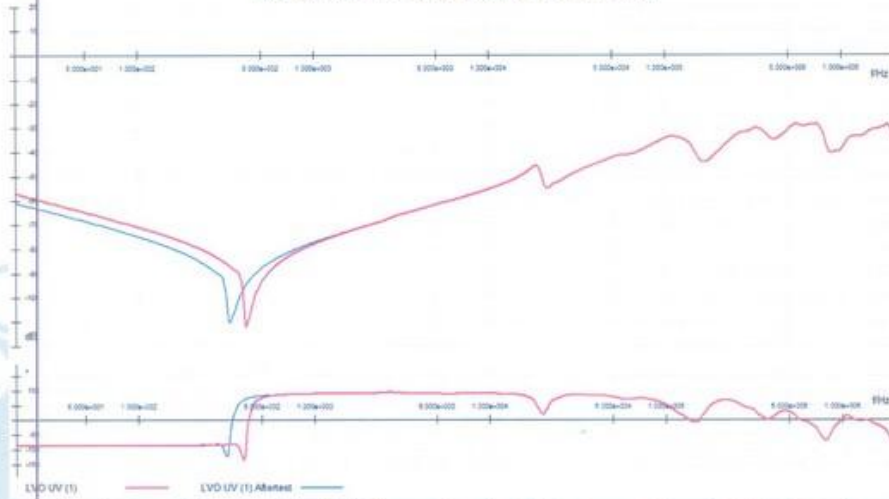
Short-time withstand current test on 50kVA distribution transformer- S
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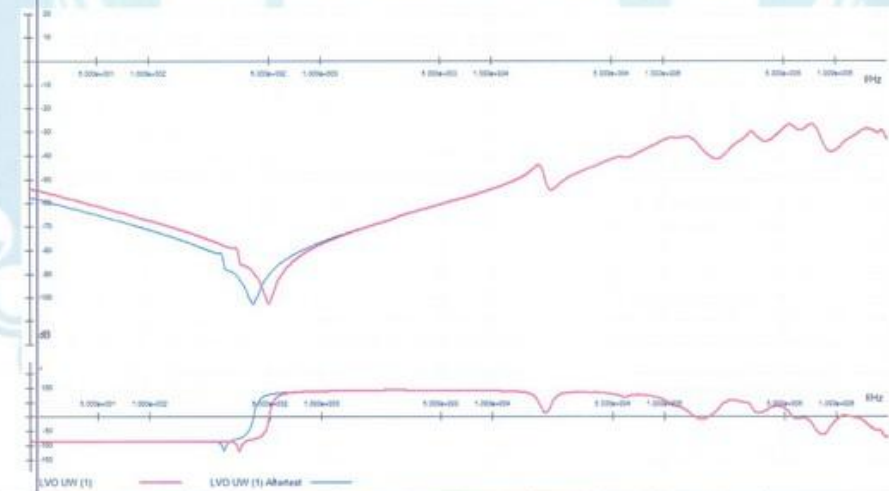


3.1. Frequency Response Analysis (FRA) comparison before and after high current tests

Red: before HC test , Blue: After HC test



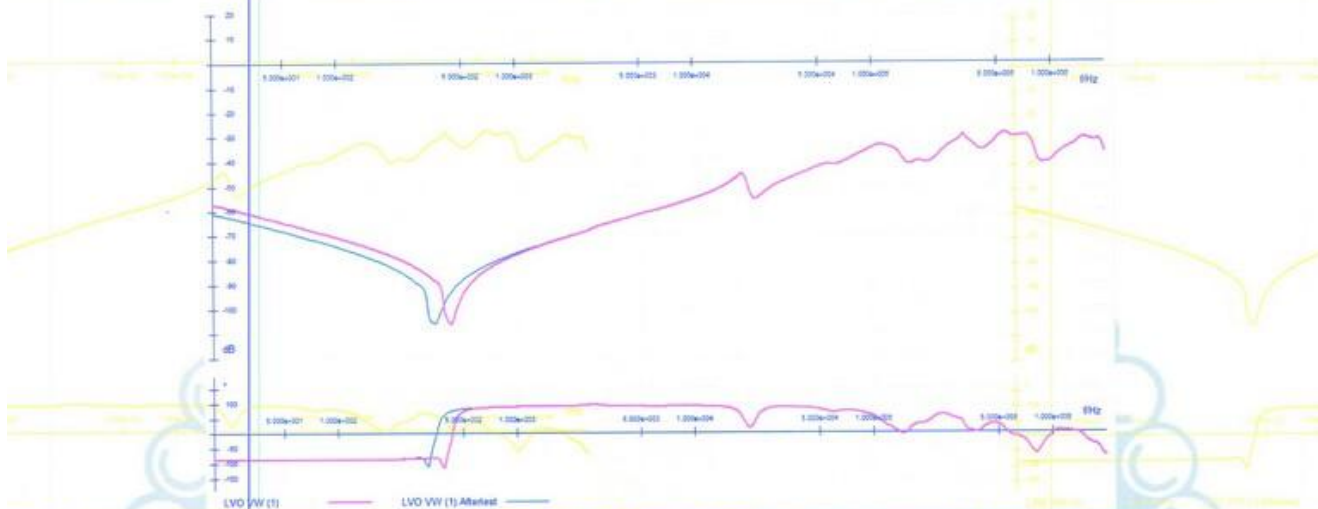
Transfer function type	Tap under test	Reference terminal	Measurement terminal	Comparison result
End-to-End	Tap 1	U	V	Intact



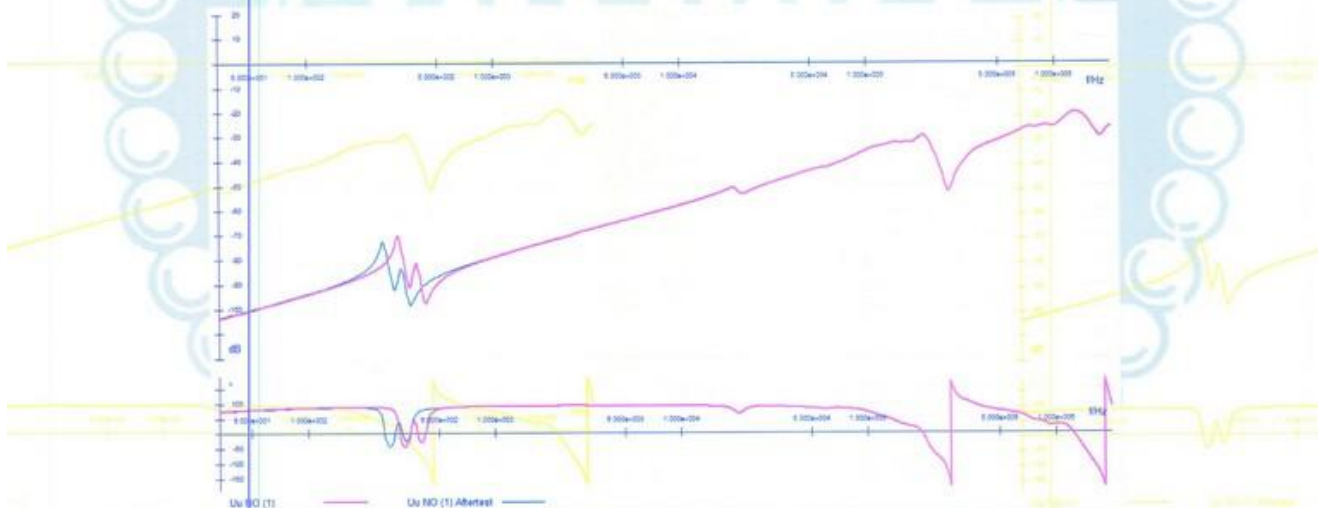
Transfer function type	Tap under test	Reference terminal	Measurement terminal	Comparison result
End-to-End	Tap 1	U	W	Intact

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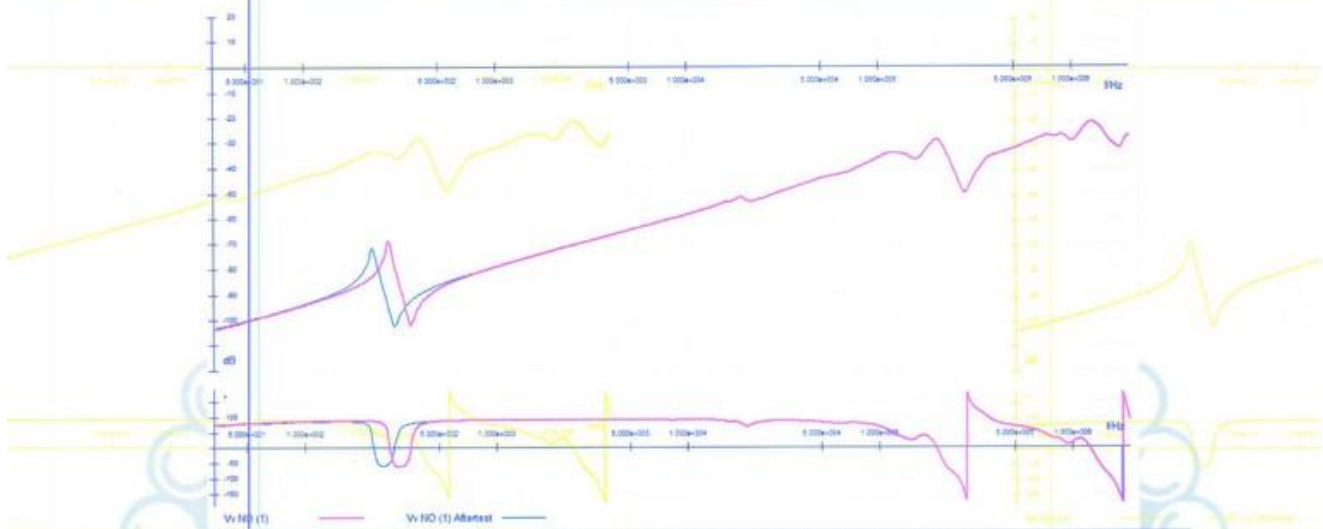
Reference terminal	Transfer function type	Tap under test	Reference terminal	Measurement terminal	Comparison result
	End-to-End	Tap 1	V	W	Intact



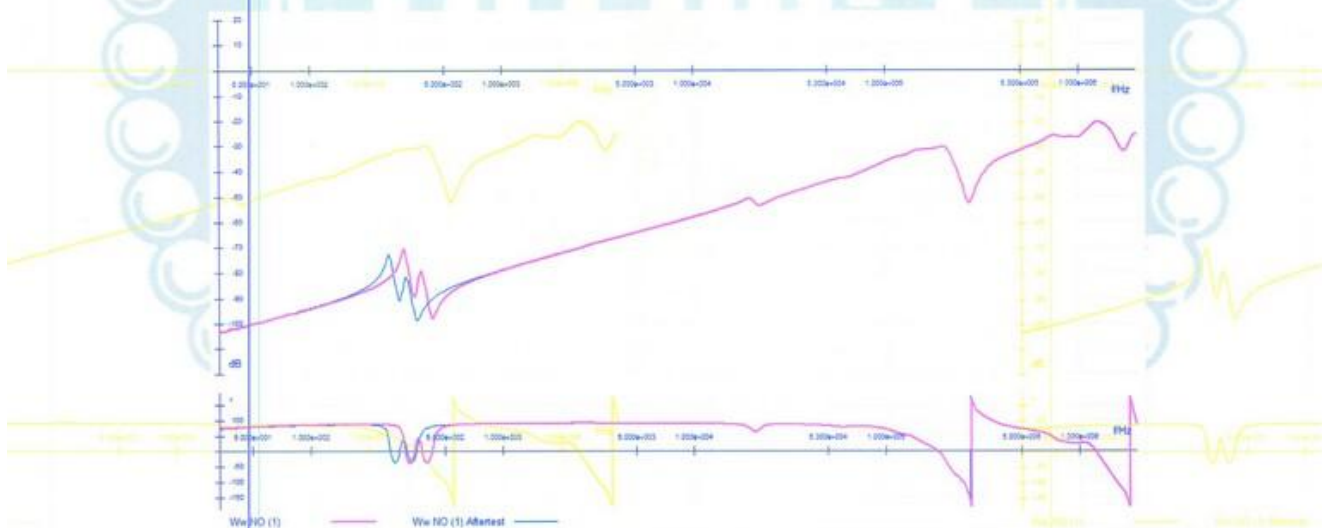
Reference terminal	Transfer function type	Tap under test	Reference terminal	Measurement terminal	Comparison result
	Capacitive Inter-winding	Tap 1	U	u	Intact



Short-time withstand current test on 50kVA distribution transformer- S/N:3082808
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Transfer function type	Tap under test	Reference terminal	Measurement terminal	Comparison result
Capacitive Inter-winding	Tap 1	V	v	Intact



Transfer function type	Tap under test	Reference terminal	Measurement terminal	Comparison result
Capacitive Inter-winding	Tap 1	W	w	Intact

Short-time withstand current test on 50kVA distribution transformer- S/N:31
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3.2. Visually inspection the core and windings by removing the active part from the tank after short circuit tests



Figure 18: One side of the transformer active part for inspection



Figure 19: The other side of the transformer active part for inspection

Result: Test Passed Successfully.

Short-time withstand current test on 50kVA distribution transformer- S/N:362867
Iran Transfo Rey Co. production

