

Inspection and Test Plan for Generator

| No. | Inspection and Test Plan | Reference Document | Acceptance Criteria | Verifying Document | Activity By | | | Remark |
|-----------------------------|--|--------------------|---------------------|-----------------------|-------------|-----|--------|--------|
| | | | | | Manuf. | TPI | Client | |
| 1 | Pre-Inspection Meeting | Spec. | Spec. | MOM | H | H | H | - |
| Before Manufacturing | | | | | | | | |
| 2 | DWG, Design, Calculation Document | IEC and ISO | IEC and ISO | DWG, Calculation book | H | R | A | - |
| 3 | WPS&PQR | ASME IX | ASME IX | Welding Book | H | R | A | - |
| 4 | Welder Qualification Certificates | ASME IX | ASME IX | Certificates | H | R | - | - |
| 5 | NDT procedures | ASME V | ASME V | Procedures | H | R | A | - |
| 6 | NDE Personnel Certificates | ASME IX | ASME IX | Certificates | H | R | - | - |
| 7 | Generator Armature and Field Windings Resistance Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 8 | Generator Armature and Field Windings Insulation Resistance Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 9 | Generator High Voltage tests of Armature and Field Windings Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |

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| 10 | Generator Dynamic Balance Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 11 | Generator Open Circuit Saturation Curve Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 12 | Generator Three Phase Short Circuit Saturation Curve Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 13 | Generator Telephone Harmonic Factor (THF) Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 14 | Generator Temperature Rise Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 15 | Generator Segregated Losses Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 16 | Generator Calculation of Efficiency Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 17 | Generator Sudden Three Phase Short Circuit Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 18 | Generator Noise Level Test Procedure | IEC and ISO | IEC and ISO | Procedure | H | R | A | |
| 19 | Painting Procedure | SSPC | SSPC | Procedure | H | R | A | |
| Materials | | | | | | | | |

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| 20 | Raw Material Inspection | ASTM | ASTM | Original Material Certificates | H | H | - | - |
| 21 | Review of Certificates | ASTM | ASTM | Certificates | H | H | - | - |
| 22 | Material Identification | ASTM | ASTM | Report | H | H | - | |
| During Fabrication | | | | | | | | |
| 23 | Fabrication Inspection | DWG/Spec | DWG/Spec | Report | H | SW | - | |
| 24 | Welding Inspection for Required Welding Components | WPS | WPS | Report | H | SW | - | |
| 25 | Checking for Outline Dimensions, Interface Dimensions, Foundation Fixing Pitch, Air Gap, End Play, Clearances (Bearing to Shaft, Shaft to Seal Ring, Gland Seal to Seal Ring) and Other Specified Dimensions | DWG/Spec | DWG/Spec | Report | H | SW | - | |
| 26 | Inspection for Tightness / Torque of Terminals | Procedure | Procedure | Report | H | SW | - | |
| 27 | Inspection for Degree of Protection | Procedure | Procedure | Report | H | SW | - | |

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| 28 | Confirm the Layout, Instruments, Controls, Terminal Boxes, etc., are Correctly Rated and are Correctly Located, with Specified Labeling | Procedure | Procedure | Report | H | SW | - | |
| 29 | Hydrostatic Testing of Mechanical Items | Procedure | Procedure | Report | H | H | | |
| 30 | Generator Armature and Field Windings Resistance Test | Procedure | Procedure | Report | H | H | - | |
| 31 | Generator Armature and Field Windings Insulation Resistance Test | Procedure | Procedure | Report | H | H | - | |
| 31 | Power Cable Heat Shock Test | Procedure | Procedure | Report | H | H | - | |
| 32 | Generator High Voltage Tests of Armature and Field Windings | Procedure | Procedure | Report | H | H | - | |
| 33 | Generator Dynamic Balance Test | Procedure | Procedure | Report | H | H | - | |
| 34 | Generator Open Circuit Saturation Curve Test | Procedure | Procedure | Report | H | H | - | |
| 35 | Generator Three Phase Short Circuit Saturation Curve Test | Procedure | Procedure | Report | H | H | - | |

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| 36 | Generator Telephone Harmonic Factor (THF) Test | Procedure | Procedure | Report | H | H | - | |
| 37 | Generator Temperature Rise Test | Procedure | Procedure | Report | H | H | - | |
| 38 | Generator Segregated Losses Test | Procedure | Procedure | Report | H | H | - | |
| 39 | Generator Calculation of Efficiency | Procedure | Procedure | Report | H | H | - | |
| 40 | Generator Sudden Three Phase Short Circuit Test | Procedure | Procedure | Report | H | H | - | |
| 41 | Checking Correct Operation of Circuit Breaker | DWG/Spec | DWG/Spec | Report | H | H | - | |
| 42 | Checking of Protection and Synchronization Devices | DWG/Spec | DWG/Spec | Report | | | | |
| 43 | Mechanical Running Test (Vibration and Performance) | Procedure | Procedure | Report | H | H | - | |
| 44 | Generator Noise Level Test | Procedure | Procedure | Report | H | H | - | |
| Final Inspection | | | | | | | | |
| 45 | Final Visual & Dimensional Check | DWG | DWG | Report | H | H | - | - |

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| 46 | Surface Preparation and Painting Inspection | Procedure | Procedure | Report | H | W | - | |
| 47 | Check of Final Book | Spec. | Spec. | DWG/ P.O | H | R | - | |
| Documentation | | | | | | | | |
| 48 | Inspection Reports | Spec./DWG | Spec./DWG | Report | H | R | - | - |
| 49 | NCR | Spec./DWG | Spec./DWG | Report | H | R | - | - |
| 50 | Review Final Data Report | Spec./DWG | Spec./DWG | Report | H | R | - | - |
| Pre-Shipment Inspection | | | | | | | | |
| 51 | Preservation and Packing | Spec. | Spec. | Report | H | H | - | - |
| 52 | Marking | Spec. | Spec. | Report | H | H | - | - |
| 53 | Loading Inspection | Spec. | Spec. | Report | H | H | - | - |
| 54 | Shipping Document Control | Procedure | Spec. | Packing List | H | H | - | - |

Abbreviations:

H: Hold Point = Hold on the production till TPI Inspector performs inspection and supervise the required test

W: Witness Point = Manufacture shall notify client and TPI Inspector but there is no hold on the production;
Client can waive this inspection based on his discretion and informs TPI Inspector accordingly.

R: Document Review = Review means Review document, which includes of material test certificates, WPS, PQR, NDT Procedures and etc.

A: Approval

SW: Spot Witness = for items with spot witness manufacture shall notify TPI inspector as fulfilling the monitoring;
For example one random visit for whole UT tests or one or two visits for whole surface preparation works for painting.

MOM: Minute of Meeting

P.O: Purchase Order

www.inspection-for-industry.com

for more information review following articles:

<http://www.inspection-for-industry.com/third-party-inspection-for-generator.html>

<http://www.inspection-for-industry.com/inspection-and-test-plan-for-generator.html>