**Niman Power Company**

**Noida Up**

Date xxxxxxxx

**Agency/supplier** : xxxxxxxxxxxxxxxxxxx

**Job** : xxxxxxxxxxxxxxxxxxxxx

Job ref No. :xxxxxxxxxxxxxxxxxxxxxx

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|  **Quality Assurance Plan for tubular lead acid battery**  |
| **Sr.**  | **Description**  | **Reference /code**  | **Acceptance norm**  |
| 1 | Codes and Standards: | IS1651 - 2013 | Test report  |
| 2 | The batteries shall be suitable for recharging by means of solar modules via incremental / open circuit regulators.  | Tubular LM Solar Battery | Test report  |
| 3 | The ambient operating range for the batteries shall be 0ºC to +50°C.  | Compliance  | Test report  |
| 4 | AH Efficiency: >95% | Compliance  | Test report  |
| 5 | WH Efficiency: >85% | Compliance  | Test report  |
| 6 | Recombination Efficiency shall be >98% | Not Applicable for Tubular Plate Lead Acid Batteries | NA |
| 7 | Self-Discharge of battery - As per IS 1651 shall not exceed 10% | <10% | Test report |
| 8 | Battery sizing Certificate from Chartered Electrical Engineer | NA | Certificate  |
| 9 | Batteries shall be provided with micro porous vent plugs with floats.  | Compliance | Test report |
| 10 | Suitable carrying handle shall also be provided. | Compliance | Test report |
| 11 | The design cycle life of batteries at 80%, 40% and 20% depth of discharge at 250C shall be specified | Compliance | Test report |
| 12 | The charge efficiency shall be more than 90% up to 70% state of charge. | Compliance | Test report |
| 13 | The topping up frequency shall be >12 months. | Compliance | Certificate from battery manufacturer  |
| 14 | The batteries shall consist of individual cells, which can be carried separately with ease while transporting. | Compliance | Certificate from battery manufacturer  |
| 15 | Battery interconnecting links shall be provided for interconnecting the cells in series and in parallel as needed. Connectors for inter cell connection (series / parallel) shall be maintenance free screws. Insulated terminal covers shall be provided. | Compliance | Certificate from battery manufacturer  |
| 16 | Warrantee certificate for battery  | 5 years  | Certificate form supplier/ manufacturer |
| 17 | Maintenance manual with make model | NA  | From battery manufacturer |

TPI (third party inspection): applicable /not applicable

Sign…………………

Seal of the company