**DECLARATION OF CONFORMITY FOR EQUIPMENT USED IN THE RECEPTION AND EXECUTION OF REMOTE MONITORING/CONTROL COMMANDS FOR RES & CHP STATIONS**

1. **Network User Details**

Company Name or Owner Company: …………………………………………………………………………………………………

Address: ……………...………………………………………………………………..…………………………………………………………………………

Town / City: ………………………………………………………………………Postal Code: ……….…………………

Email address: ……………………..………………………………………………………………………….

1. **Technical Manager (TM)**

Full Name: ………………………………………………………………………………………………………………………………………………

Landline no.: …………………………………………………………………………………………………………………………………………

Mobile no.: ………………………………………………………………………………………………………………………………………………

E-mail address: …………………………………………………………………………………………………

1. **Aggregator Details:**

Company Name:..............................................................................................................................................................

Contact no.:....................................................................................................................................................

Email address:................................................................................................................

The station is already equipped to execute active power set-point commands from an Aggregator:

YES □ NO □

If NO:

The station will be capable of executing active power set-point commands from an Aggregator within one (1) month from the submission of this declaration: YES □

1. **Details of Power Production Station from RES or CHP**

Production Technology: .…………………………………………………..…………………………………………………….……………………..

Supply no.: …………………………………………………..…...................................................................................................

Address: ……………...………………………………………………………………..…………………………………………………………………………

Town / City: ……………………………………………………………………… Postal Code:………….………………

Geographical coordinates of the Coupling Substation (as per EΓΣΑ87): ………...………………………………………………………………..……………………………………………………………………………………………………..

1. **Power Data of Power Production Unit from RES or CHP**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Total Installed Power (kW) | Maximum Injection Power Capacity (kW) | Maximum Permissible Injection Power (kW) | Maximum Reactive Power Generation Capacity | | Maximum Positive Power Factor | Maximum Negative Power Factor |
| Inductive (kVAr) | Capacitive (kVAr) |
|  |  |  |  |  |  |  |

1. **Relay Settings**

|  |  |  |  |
| --- | --- | --- | --- |
| Scale | Setting | Time (s) | Availability |
| Phase Overcurrent (Α) |  |  | □ |
| Overcurrent faults are detected separately per phase | **-** | - | □ |
| Earth Overcurrent (A) |  |  | □ |
| Earth faults are detected separately per phase | **-** | **-** | □ |
| Overvoltage (kV) |  |  | □ |
| Undervoltage (kV) |  |  | □ |
| Overfrequency (Hz) |  |  | □ |
| Underfrequency (Hz) |  |  | □ |
| Homopolar Voltage (kV) |  |  | □ |
| RoCoF () |  |  | □ |

1. **Availability of Digital Signals from the Station's equipment**

|  |  |  |
| --- | --- | --- |
| **Description** | **YES** | **NO** |
| The position of the Earthing Conductor (open/closed) of the Automatic Circuit Breaker (ACB) is available | □ | □ |
| Production capacity in % is available | □ | □ |

1. **Data of the Equipment used in the reception and execution of remote monitoring/control commands for RES & CHP Stations**

Manufacturer: ……………………..…………………………………………………..…………………………………………………………………….

Model: ………………………………………………………………………………………………………………………………………………………………

Serial Number (S/N): …………………………………………………………………………………………………………………………………

Manufacturing Date: ……………………………………………………………………………………………………………………………….

1. **Capacity to enable additional features in in the station's equipment**

|  |  |  |
| --- | --- | --- |
| **Feature** | **YES** | **NO** |
| Reactive Power Determination Feature | □ | □ |
| cosφ Power Factor Determination Feature | □ | □ |
| cosf Adjustment Feature based on the cosφ=f(P) curve | □ | □ |
| Reactive Power Adjustment Feature based on the U(Q) curve | □ | □ |
| LFSM-O Feature as per RfG | □ | □ |
| FSM Feature as per RfG | □ | □ |
| LFSM-U Feature as per RfG | □ | □ |

1. **Data of the Equipment’s Uninterruptible Power Supply System**

System Power: ……………………………………………………………………………………………………………………………………………

Battery Capacity: …………………………………………………..…………………………………………………..………………….

If the Telecommunications Equipment features a different uninterrupted operation system:

System Power: ……………………………………………………………………………………………………………………………………………

Battery Capacity: …………………………………………………..…………………………………………………..………………….

1. **Metering Devices**

Measurements are taken from the protection relay: YES □ NO □

If YES:

Protection Relay Model: ………………………………………………………………………………………………………

If NO:

Electrical Measurement Point: ………………………………………………………………………………………………….

Metering Device 1 Type (Transformer, resistor voltage divider, etc.) (VOLTAGE): ………………………………………………………………….

Metering Device 1 Accuracy: ..................................................................................................................................................... …………………………………………………………………………………………………………………………………..

Metering Device 2 Type (Transformer, Rogowski etc.) (CURRENT): ................................................................................. ………………………………………………………………………

Metering Device 2 Accuracy: ..................................................................................................................................................... …………………………………………………………………………………………………………………………………..

1. **For stations with connection date from 17.05.2018 onwards**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Operational requirement under EU Regulation 2016/631 (“RfG”)\*** | **Application** | **Feature is enabled** | |
| **YES** | **NO** |
| **1.** | Limited Frequency Sensitive Mode-Overfrequency (LFSM-O) | in all power units |  |  |
| **2** | Fault Ride Through capability (FRT) | In power units under Category of Importance B |  |  |
| **3** | Post Fault Active Power Recovery | In power units under Category of Importance B |  |  |
| **4** | Fast Fault Current Injection | In “Power Park Modules” (PPM) under Category of Importance B |  |  |
| \* For the operational requirements, the parameters under RAWEW Decision 1165/2020 (Government Gazette B 3757/7.9.2020) are applied. | | | | |

Equipment certification to demonstrate compliance with the above operational requirements: ………………………………………………. (e.g. per NC-RfG, per VDE AR-N 4110, per EN 50549)

1. **Router installation**

The router that I purchased from HEDNO for the telecommunication connection between the production station and the Distribution Network Control Centre has been successfully installed: YES □

**General instructions for completing the Table below**

In the “Declaration of Conformity’ column, compliance or non-compliance must be clearly indicated using the words YES or NO respectively.

If there are specific items requested or appropriate to be noted, please indicate properly in the “Notes” column.

The Technical Requirements of the Equipment have been published on HEDNO’s website.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CONTROL PROCEDURE** | | | | | | |
| **S/N** | **T.S. Paragraph for RES equipment** | **DESCRIPTION** | **SUMMARY** | **Declaration of Conformity (YES/NO)** | **Notes** | **Instruction to Complete the DoC** |
| 1 | ***2*** | ***Equipment and Operational Requirements*** |  |  |  |  |
| 2 | ***2.1*** | ***Remote control and remote monitoring of the station*** |  |  |  |  |
| 3 | 2.1.1 |  | The Equipment controls the Automatic Disconnect Switch (ADC). |  |  |  |
| 4 | 2.1.1 |  | The equipment monitors the position of the Automatic Disconnect Switch (ADC). |  |  |  |
| 5 | 2.1.1 |  | The Equipment monitors the position of the Earthing Conductor. |  |  |  |
| 6 | 2.1.1 |  | The Equipment monitors the control status of the Automatic Disconnect Switch (ADC) (local/remote). |  |  |  |
| 7 | 2.1.1 |  | The Equipment controls the active power output of the Station. |  |  |  |
| 8 | 2.1.1 |  | The Equipment has the capacity to immediately cut the power of the Station completely. |  |  |  |
| 9 | 2.1.1 |  | The Equipment confirms the completion of each command sent by HEDNO. |  |  |  |
| 10 | 2.1.1 |  | The Equipment provides notifications on the execution of power determination commands received from another operator (Aggregator, Producer or Technical Manager, EMT, etc.). |  |  |  |
| 11 | 2.1.2 |  | The Equipment has the capacity to control the reactive power of the Station. |  |  |  |
| 12 | 2.1.2 |  | The Equipment has the capacity to control the power factor (cosφ) of the Station. |  |  |  |
| 13 | 2.1.2 |  | The Equipment has the capacity to control the voltage of the station based on the U(Q) curve. |  |  |  |
| 14 | 2.1.2 |  | The Equipment has the capacity of frequency support through the LFSM-O mode. |  |  |  |
| 15 | 2.1.2 |  | The Equipment has the capacity of frequency support through the FSM mode. |  |  |  |
| 16 | 2.1.2 |  | The Equipment has the capacity of frequency support through the LFSM-U mode. |  |  |  |
| 17 | ***2.2*** | ***General*** |  |  |  |  |
| 18 | 2.2.1 |  | The Equipment has an Ethernet communication port. |  |  |  |
| 19 | 2.2.1 |  | The Ethernet communication port of the Equipment complies with the 100 Base-TX standard. |  |  |  |
| 20 | 2.2.1 |  | The Ethernet communication port of the equipment is female RJ-45 type. |  |  |  |
| 21 | 2.2.1 |  | The Ethernet communication port of the Equipment is used for communication, via IEC 60870-5-104 protocol and the Telecommunications Equipment, with the SCADA/DMS system of HEDNO. |  |  |  |
| 22 | 2.2.1 |  | The Equipment has all the necessary ports for communication with the devices and equipment (inverter, protection relay, protection relay, ADC, etc.) of the Station. |  |  |  |
| 23 | 2.2.1 |  | The Equipment features DI/DO cards for simple cable connections. |  |  |  |
| 24 | 2.2.1 |  | Via those, it controls the devices and equipment of the Station in response to the commands received from the SCADA/DMS system of HEDNO and sends all the necessary measurements and their statuses as specified in the Technical Requirement. |  |  |  |
| 25 | 2.2.2 |  | The Equipment, according to IEC 60870-5-104, is a server (slave) and the SCADA/DMS system of HEDNO is the master. |  |  |  |
| 26 | 2.2.3 |  | The Equipment has built-in Programmable Logic Controller (PLC) functions. |  |  |  |
| 27 | 2.2.3 |  | The Equipment may in the future acquire the features of an integrated Programmable Logic Controller (PLC). |  |  |  |
| 28 | 2.2.3 |  | The Equipment features slots for future PLC modules. |  |  |  |
| 29 | 2.2.4 |  | The Equipment can be expanded with additional input/output (I/O) modules. |  |  |  |
| 30 | 2.2.4 |  | The Equipment can be upgraded to higher computing power. |  |  |  |
| 31 | 2.2.4 |  | The Equipment can be upgraded for increased metering and operational accuracy. |  |  |  |
| 32 | 2.2.5 |  | The Equipment is powered by a suitable uninterruptible power supply (UPS) system. |  |  |  |
| 33 | 2.2.5 |  | The telecommunications equipment (router) is powered by a suitable uninterruptible power supply system (UPS). |  |  |  |
| 34 | 2.2.5 |  | The uninterrupted power supply of the Equipment in case of loss of the electrical network lasts at least two (2) hours. |  |  |  |
| 35 | 2.2.5 |  | The uninterrupted power supply of the Telecommunications Equipment (router) in case of loss of the electrical network lasts at least two (2) hours. |  |  |  |
| 36 | 2.2.5.1 |  | If the Telecommunications Equipments (router) is located in a different area, and is not powered by the same UPS system as the Equipment, it has its own separate uninterruptible power supply. |  |  |  |
| 37 | 2.2.5.2 |  | Is any other telecommunications or network equipment used to interface the Equipment with the router? |  |  |  |
| 38 | 2.2.5.2 |  | The additional telecommunication or network equipment is powered by a UPS, which provides power in case of an outage for at least two (2) hours. |  |  | Fill in only if the answer to the S/N is YES: 37 |
| 39 | 2.2.6 |  | Whenever loss of communication with the SCADA/DMS system is detected, the Equipment launches a reset procedure of the router with a temporary interruption and reset of its power supply. |  |  | If NO, please indicate the reason for which it cannot be executed. |
| 40 | 2.2.6 |  | The restart procedure shall be executed by temporarily interrupting and restoring the electrical power supply to the communication module. |  |  | If NO, please indicate the reason for which it cannot be executed. |
| 41 | 2.2.6.1 |  | The amount of time that the communication is lost before restarting is configurable, between 30-180 seconds. The default value is 90 seconds. |  |  |  |
| 42 | 2.2.6.2 |  | After each restart there is a period of 10 minutes where further restarting of the telecommunication module is prevented even if the communication fault has not been fixed. |  |  |  |
| 43 | 2.2.7 |  | During any loss of communication with the SCADA/DMS system, the Equipment and consequently the Station, continues to follow the last operating settings that were set before the loss of communication. |  |  |  |
| 44 | 2.2.8 |  | For the restart of the Telecommunications Equipment an appropriate electonic component is used for the management (ON/OFF) of power supply. |  |  | Please indicate the type of electronic component. |
| 45 | 2.2.10 |  | The Equipment features as Sync Master (Time Server) the IEC 60870-5-104 protocol with which it communicates with the SCADA/DMS system of HEDNO. |  |  |  |
| 46 | 2.2.10 |  | An NTP server or a GPS is NOT used as Sync Master (Time Server). |  |  |  |
| 47 | 2.2.11 |  | The Equipment is designed for durability and reliability. |  |  |  |
| 48 | 2.2.11 |  | The Equipment has the capacity to operate in industrial-type and harsh environments. |  |  |  |
| 49 | 2.2.12 |  | The equipment is situated in an environment that is shielded from natural elements. |  |  |  |
| 50 | 2.2.12 |  | The Equipment is installed in an environment which is protected against unauthorized interference with third parties. |  |  |  |
| 51 | 2.2.14 |  | The Equipment can be controlled either locally or remotely. |  |  |  |
| 52 | 2.2.14.1 |  | If the Equipment is placed in local control mode, the Station can operate according to the last command sent to the Equipment when it was in remote mode. |  |  |  |
| 53 | 2.2.14.2 |  | In local mode, no command received from the SCADA/DMS system is executed. |  |  |  |
| 54 | 2.2.14.4 |  | When resetting the Equipment to remote mode, the Station follows the last operational settings even if these were received while the Equipment was in local mode. |  |  |  |
| 55 | 2.2.14.5 |  | When the Equipment is reset to a remote mode, any opening commands of the ADC received at the time when the Equipment was in the local mode are not executed. |  |  |  |
| 56 | ***2.3*** | ***Control of the Automatic Disconnect Switch (ADC) of the Station*** |  |  |  |  |
| 57 | 2.3.1 |  | The ADC can be opened by command (S/N:46, Technical Requirement, Table 4). |  |  |  |
| 58 | 2.3.2 |  | The position of the ADC is known through the signal (S/N:13, Technical Requirement, Table 4). |  |  |  |
| 59 | ***2.4*** | ***Control of Active Power Output*** |  |  |  |  |
| 60 | 2.4.1 |  | The control of the active power is done by sending analog commands of two types: |  |  |  |
| 61 | 2.4.1 i |  | 1) (%) percentage set-point |  |  |  |
| 62 | 2.4.1 i |  | The % set-point range is from 0-100%. |  |  |  |
| 63 | 2.4.1 i |  | 0% corresponds to 0 kW and 100% to the maximum power injection into the Grid. |  |  |  |
| 64 | 2.4.1 i |  | A value of -1 in the % set-point means that the set-point is canceled and the Station injects freely. |  |  |  |
| 65 | 2.4.1 ii |  | 2) Specific size set-point (kW) |  |  |  |
| 66 | 2.4.1 ii |  | The set-point range in kW is from 0 kW to the maximum injection power in the Grid. |  |  |  |
| 67 | 2.4.1 ii |  | A value of -1 in Set-point in kW means that the set-point is canceled and the Station injects freely. |  |  |  |
| 68 | 2.4.3 i |  | The Station has the capacity to receive and execute analog commands (set-point percentage or specific value type) to control the Active Power up to the maximum power injected into the Grid. |  |  |  |
| 69 | 2.4.3 ii |  | The present active power injection power of the Station shall not exceed the currently activated active power command. |  |  |  |
| 70 | 2.4.3 ii |  | In case the respective equipment of the Station is unable to implement a specific value set **in %**, it automatically selects a lower value. |  |  | In this case, please record the percentages that the station can implement. |
| 71 | 2.4.3 ii |  | In case the respective equipment of the Station fails to implement a specific value set **in kW**, it automatically selects a lower value. |  |  | In this case, please record the values in kW that the Station can implement. |
| 72 | 2.4.3 iii |  | In the case of two separate commands sent either by HEDNO or by a third party that will be active at the same time, the command that leads to a lower amount of active power output is implemented.  *Namely, the command that leads to a greater limitation of power prevails and is applied. This means that if the command leading to a higher limitation is deactivated, the other command leading to a lower limitation should be applied (if it remains active).* |  |  |  |
| 73 | 2.4.3 iv |  | The limitation of the total active power output of the Station is achieved immediately, and within the time specified in the Technical Requirement (Table 1, Technical Requirement) |  |  |  |
| 74 | 2.4.3 v |  | Within the same time limits of S/N: 73 (§2.4.3 iv) (Table 1, Technical Requirement), the Equipment sends to the SCADA/DMS of HEDNO a verification of the successful execution of the command. |  |  |  |
| 75 | 2.4.3 vi |  | Within the same time limits of S/N: 73 (§2.4.3 iv) (Table 1, Technical Requirement), the respective measurements are renewed and sent to SCADA/DMS (S/N: 1-10, Table 4, Technical Requirement) |  |  |  |
| 76 | 2.4.4 |  | The command of immediate full cut of the Station's injection takes precedence over all set-points in % set by HEDNO or other operator, and the Station resets its injection to zero at the respective times. *Namely, the full-cut command prevails and is applied. This means that if the full-cut command is disabled, the set point % should be applied (if it remains active).* |  |  |  |
| 77 | 2.4.4 |  | The command of immediate full cut of the Station's injection takes precedence over all set-points in kW set by HEDNO or other operator, and the Station resets its injection to zero at the respective times.  *Namely, the full-cut command prevails and is applied. This means that if the full-cut command is disabled, the set point in kW (if still active) should be applied.* |  |  |  |
| 78 | 2.4.5 |  | Digital command completion acknowledgment signals are signals that are kept on the Equipment only until their receipt is acknowledged by the SCADA/DMS system via IEC 60870-5-104. |  |  |  |
| 79 | 2.4.5 |  | When the correct transmission of this signal to the SCADA/DMS system of HEDNO is verified, this signal is reset. |  |  |  |
| 80 | 2.4.5 |  | The verification signal is a toggle: first, the “active” status is sent and immediately after its reception, the “inactive” state is sent. |  |  |  |
| 81 | ***2.5*** | ***Control of Reactive Power / cosφ Power Factor*** |  |  |  |  |
| 82 | 2.5.1 |  | The Equipment has the capacity to receive and execute analog commands to control the Reactive Power. |  |  |  |
| 83 | 2.5.1 |  | The Equipment has the capacity to receive and execute analog Power Factor (cosf) control commands. |  |  |  |
| 84 | 2.5.1 |  | The Equipment has the capacity to receive and execute set-point commands at a frequency of not more than one per minute. |  |  |  |
| 85 | 2.5.3 |  | The execution of the analog command to control reactive power in kVAr requires the activation of the reactive power setting function by sending the relevant command (S/N:48, Table 4, Technical Requirement). |  |  |  |
| 86 | 2.5.4 |  | The reactive power setting values range between +60% and -60% of the maximum power injection of the Station into the Grid. |  |  |  |
| 87 | 2.5.4.1 |  | A positive sign means inductive injection, a negative sign means capacitive. |  |  |  |
| 88 | 2.5.4.2 |  | In case a value is provided higher than the Station's capacity then the Station adjusts it according to its capacity. |  |  |  |
| 89 | 2.5.4.3 |  | Even in the case above (S/N: 88 / §2.5.4.2) a verification of completion of the command in provided. |  |  |  |
| 90 | 2.5.4.4 |  | In order to execute the set-point command concerning reactive power, the activation of the reactive power setting function is required (S/N: 48, Table 4, Technical Requirement) and in addition that value 1 has been provided in the station's set-point command (A/A: 60, Table 4, T.A.). |  |  |  |
| 91 | 2.5.4.4 |  | If one of the above is not applied (S/N: 90 / §2.5.4.4), the command is NOT executed. |  |  |  |
| 92 | 2.5.5 |  | The Equipment can adjust the reactive power in relation to the voltage at the point of connection to the Grid, according to a voltage-reactive power characteristic U(Q) predefined by the Operator. |  |  |  |
| 93 | 2.5.5 |  | In order to activate this setting (S/N:92 / §2.5.5), the value 4 must be set in the command for setting the Station mode (S/N: 60, Table 4, Technical Requirement) and at the same time the command for setting reactive power based on the U(Q) curve must be activated (S/N: 50, Table 4, Technical Requirement) |  |  |  |
| 94 | 2.5.6 |  | The power factor setting ranges from 0,85 to 1. |  |  |  |
| 95 | 2.5.6.1 |  | A positive sign means inductive injection, a negative sign means capacitive. |  |  |  |
| 96 | 2.5.6.2 |  | A value of cosφ = 0 means that the set-point cosφ has not been activated. |  |  |  |
| 97 | 2.5.6.3 |  | If a value is given that exceeds the Station's capacity then the Station will adjust it according to its capacity. |  |  |  |
| 98 | 2.5.6.4 |  | Even in the case above (S/N: 97 / §2.5.6.3) a verification of completion of the command is provided. |  |  |  |
| 99 | 2.5.6.5 |  | In order to execute the set-point command regarding the cosφ power factor, the value 2 must be provided in the station mode setting command (S/N: 60, Table 4, Technical Requirement). 60, Table 4, Technical Requirement) |  |  |  |
| 100 | 2.5.7 |  | The determination of the reactive power output of the Station (either in kVAr or via cosφ) is achieved immediately, and in any case within one (1) minute at the latest. |  |  |  |
| 101 | 2.5.8 |  | The Station sends to the SCADA/DMS of HEDNO a verification of correct and complete execution of the command within one (1) minute. |  |  |  |
| 102 | 2.5.8 |  | Within the same time, the corresponding measurements will be renewed and sent (S/N: 1-10, Table 4, Technical Requirement) |  |  |  |
| 103 | 2.5.9 |  | The Equipment can adjust the cosφ as a function of the active power (cosφ=f(P)). |  |  |  |
| 104 | 2.5.9 |  | In order to activate this setting (S/N:103 / 2.5. 9), the value 3 must be set in the command for setting the Station mode (S/N: 60, Table 4, Technical Requirement) 60, Table 4, Technical Requirement) |  |  |  |
| 105 | ***2.6*** | ***Support of frequency*** |  |  |  |  |
| 106 | 2.6 | Additional checks | The Equipment supports the exchange of signals for the activation of LFSM-O, FSM, LFSM-U modes according to RfG. |  |  |  |
| 107 | ***2.7*** | ***Digital Signals from the Equipment*** |  |  |  |  |
| 108 | ***2.7.1*** | ***General*** |  |  |  |  |
| 109 | 2.7.1 I | General | Lack of communication with any of the production equipment (inverter, etc.) of the Station. |  |  |  |
| 110 | 2.7.1 II | General | Equipment control status (local/remote). |  |  |  |
| 111 | 2.7.1 III | General | State of diagnosis of the good condition of the Equipment. |  |  |  |
| 112 | 2.7.1 IV | General | Determination of the active power of the Station by another entity. |  |  |  |
| 113 | 2.7.1 IV | General | Determination of reactive power of the Station by another operator. |  |  |  |
| 114 | 2.7.1 IV | General | Determination of the cosf of the station by another operator. |  |  |  |
| 115 | 2.7.1 IV | General | Determination of the Station mode based on the cosφ=f(P) curve by another operator. |  |  |  |
| 116 | 2.7.1 IV | General | Determination of the Station mode based on a U(Q) curve from another operator. |  |  |  |
| 117 | 2.7.1 V | General | Signal of verification of completion of the command (from HEDNO) of the Active Power Determination Station (in %) within the time specified in the Technical Requirement (Table 1). |  |  | The digital command completion verification signal is a signal that is only maintained until the reception verification is received by the SCADA/DMS system, so that the completion of one command at a time is verified. |
| 118 | 2.7.1 V | General | Verification signal of the completion of the command (from HEDNO) of the Station for the determination of active power (in KW) within the time specified in the Technical Requirement. (Table 1). |  |  | The digital command completion verification signal is a signal that is only maintained until the reception verification is received by the SCADA/DMS system, so that the completion of one command at a time is verified. |
| 119 | 2.7.1 V | General | Command completion verification signal (from HEDNO) for immediate full cut of the Station. |  |  | The digital command completion verification signal is a signal that is only maintained until the reception verification is received by the SCADA/DMS system, so that the completion of one command at a time is verified. |
| 120 | 2.7.1 V | General | Verification signal of completion of the order (from DEDDEO) of the Station for determining reactive power. |  |  | The digital command completion verification signal is a signal that is only maintained until the reception verification is received by the SCADA/DMS system, so that the completion of one command at a time is verified. |
| 121 | 2.7.1 V | General | Command completion verification signal (from HEDNO) of the cosf determination of the Station. |  |  | The digital command completion verification signal is a signal that is only maintained until the reception confirmation is received by the SCADA/DMS system, so that the completion of one command at a time is verified. |
| 122 | 2.7.1 VI | General | LFSM-O mode activation verification signal. |  |  |  |
| 123 | 2.7.1 VI | General | FSM mode activation verification signal. |  |  |  |
| 124 | 2.7.1 VI | General | LFSM-U mode activation verification signal. |  |  |  |
| 125 | 2.7.1 VII | General | Station operating status identification signal in reactive power / cosφ / cosφ setting mode based on the cosφ = f(P) curve / reactive power based on the U(Q) curve. |  |  |  |
| 126 | ***2.7.2*** | ***Sending of Protection Signals from the Protection Relay and the position of the Automatic Disconnect Switch (ADC)*** |  |  |  |  |
| 127 | 2.7.2 I | Sending Signals from the Protection Relay (Protection Signals) | Automatic Disconnect Switch status (CB Status) (Open/Close). |  |  |  |
| 128 | 2.7.2 II | Sending Signals from the Protection Relay (Protection Signals) | Automatic Disconnect Switch status (Local/Remote). |  |  |  |
| 129 | 2.7.2 III | Sending Signals from the Protection Relay | Earthing Status (ES Status) (Open/Close). |  |  |  |
| 130 | 2.7.2 IV | Sending Signals from the Protection Relay (Protection Signals) | Health status of the relay (Relay Status). |  |  |  |
| 131 | 2.7.2 V a) | Sending Signals from the Protection Relay (Protection Signals) | Phase overcurrent errors. |  |  |  |
| 132 | 2.7.2 V b) | Sending Signals from the Protection Relay (Protection Signals) | Earth Fault. |  |  |  |
| 133 | 2.7.2 V c) | Sending Signals from the Protection Relay (Protection Signals) | Overvoltage |  |  |  |
| 134 | 2.7.2 V d) | Sending Signals from the Protection Relay (Protection Signals) | Undervoltage. |  |  |  |
| 135 | 2.7.2 V e) | Sending Signals from the Protection Relay (Protection Signals) | Overfrequency. |  |  |  |
| 136 | 2.7.2 V f) | Sending Signals from the Protection Relay (Protection Signals) | Underfrequency. |  |  |  |
| 137 | 2.7.2 V g) | Sending Signals from the Protection Relay (Protection Signals) | Homopolar voltage protection. |  |  |  |
| 138 | 2.7.2 V (h) | Sending Signals from the Protection Relay (Protection Signals) | RoCoF. |  |  |  |
| 139 | ***2.8*** | ***Command signals to the production station*** |  |  |  |  |
| 140 | 2.8 a | Command signals to the production station | Command to open the station's IDC (Open). |  |  |  |
| 141 | 2.8 b | Command signals to the production station | Maximum permissible active power (set-point) in kW. |  |  |  |
| 142 | 2.8 c | Command signals to the production station | Maximum permissible active power (set-point) % . |  |  |  |
| 143 | 2.8 d | Command signals to the production station | Command to immediately cut the Station's full injection power (Active & Inactive). |  |  |  |
| 144 | 2.8 e | Command signals to the production station | Analog set-point (discrete integer value) command signal for setting the reactive power. |  |  |  |
| 145 | 2.8 f | Command signals to the production station | Analog set-point (discrete decimal value) command signal for setting the power factor cosφ. |  |  |  |
| 146 | 2.8 g | Command signals to the production station | Command to enable - disable reactive power setting. |  |  |  |
| 147 | 2.8 g | Command signals to the production station | Command to enable or disable the cosφ adjustment function based on the cosφ=f(P) curve. |  |  |  |
| 148 | 2.8 g | Command signals to the production station | Command to enable or disable the reactive power regulation function based on the U(Q) curve. |  |  |  |
| 149 | 2.8 h | Command signals to the production station | Command to enable or disable the LFSM-O mode. |  |  |  |
| 150 | 2.8 h | Command signals to the production station | Command to enable or disable the FSM mode. |  |  |  |
| 151 | 2.8 h | Command signals to the production station | Command to enable - disable the LFSM-U mode. |  |  |  |
| 152 | 2.8 i | Command signals to the production station | Command to define the mode of operation of the station in reactive power / cosφ / cosφ regulation mode based on the cosφ = f(P) curve / reactive power based on the U(Q) curve. |  |  |  |
| 153 | ***2.9*** | ***Sending of Measurements*** |  |  |  |  |
| 154 | 2.9.1 |  | The Station, via the Equipment, has the capacity to continuously update and send the measurements listed in Table 4 of the Technical Requirement |  |  |  |
| 155 | 2.9.2 |  | The Station through the Equipment provides updates on its current production capacity. |  |  |  |
| 156 | 2.9.3 |  | The fault of the active power measurement is <1.5%. |  |  |  |
| 157 | 2.9.3 |  | The fault of the reactive power measurement is <1.5%. |  |  |  |
| 158 | 2.9.3 |  | The fault of the current per phase measurement is <1.5%. |  |  |  |
| 159 | 2.9.3 |  | The fault of the voltage per phase measurement is <1.5%. |  |  |  |
| 160 | 2.9.3 |  | The fault of the frequency measurement is <0.06%. |  |  |  |
| 161 | 2.9.3 |  | The fault of the power factor measurement is <1.5%. |  |  |  |
| 162 | 2.9.3.1 |  | The point of measurement shall be taken at an MV point of the Station. |  |  | The point of the Station on which measurements are taken must be recorded. |
| 163 | 2.9.4 |  | The process of taking all measurements integrates filtering techniques, both at the hardware and software level. |  |  |  |
| 164 | 2.9.5 |  | The transmission to SCADA/DMS of the voltage measurement is implemented at regular intervals of 15min and only when it changes more than 100V or 0.5% of the nominal, in which case it is sent immediately. |  |  |  |
| 165 | 2.9.5 |  | The transmission to SCADA/DMS of the current measurement is implemented at regular intervals of 15min and only when it changes by more than 5% of the nominal value, in which case it is sent immediately. |  |  |  |
| 166 | 2.9.5 |  | The transmission to SCADA/DMS of the active power measurement is implemented at regular intervals of 15min and additionally only when it changes by more than 5% of the nominal, in which case it is sent immediately. |  |  |  |
| 167 | 2.9.5 |  | The transmission to SCADA/DMS of the reactive power measurement is implemented at regular intervals of 15min and only when it changes by more than 5% of the nominal, in which case it is dispatched immediately. |  |  |  |
| 168 | 2.9.5 |  | The frequency measurement is sent to SCADA/DMS at regular intervals of 15min and only when it changes by more than 0.15Hz or 0.3% of the nominal frequency, in which case it is dispatched immediately. |  |  |  |
| 169 | 2.9.5 |  | The transmission to SCADA/DMS of the power factor measurement is implemented at regular intervals of 15min and only when it changes by more than 0.03, in which case it is dispatched immediately. |  |  |  |
| 170 | ***3*** | ***Equipment Programming Requirements*** |  |  |  |  |
| 171 | 3.1 | General | The Equipment supports the General Interrogation (GI) procedure. |  |  |  |
| 172 | 3.1 | General | After each loss of communication, the General Interrogation (GI) procedure is activated. |  |  |  |
| 173 | ***3.3*** | ***Equipment Timings*** |  |  |  |  |
| 174 | ***3.3.1*** | ***Table 3A*** | Thee general timing settings of the IEC 60870-5-104 protocol specified in the Equipment must be recorded. |  |  |  |
| 175 | 3.3.1 | Equipment Timings | t0: Time out of connection establishment. |  |  | Record the value set for t0. |
| 176 | 3.3.1 | Equipment Timings | t1: Time out of send or test APDUs |  |  | Record the value set for t1. |
| 177 | 3.3.1 | Equipment Timings | t2: Time out for acknowledge in case of no data messages t2 < t1 |  |  | Record the value set for t2. |
| 178 | 3.3.1 | Equipment Timings | t3: Time out for sending test frames in case of a long idle state |  |  | Record the value set for t3. |
| 179 | 3.3.1 | Equipment Timings | k: Maximum difference for the receive number to send state variable |  |  | Record the value set for k. |
| 180 | 3.3.1 | Equipment Timings | w: Latest acknowledge after receiving w  (I-format APDUs) |  |  | Record the value set for w. |
| 181 | 3.3.1 | Equipment Timings | Port Number |  |  | Record the number of the port designated. |

The check was conducted by:

Technical Manager's ON/MO: ……………………………………………………………………………………………………………………….

At the individual risk of each of the undersigned and knowing the penalties provided for by the provisions of par. 6 of article 22, Law 1599/1986 in case of false declaration, it is declared that everything which is recorded in this Declaration of Conformity is true, and that all the required checks of the attached relevant protocols have been carried out diligently and that the results recorded in these protocols are true.

Technical Manager Signature: ……………………………………………………………….…………….……………………………………………………………………

Network User Signature: ………………………………………………………………………………………...................................