Technical assignment

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| 1 | The name of the object | “Gardabani Central” |
| 2 | Brief description of the object | Booster pump station, located in Gardabani (81.15.08.339). The pumping station pumps water in two independent directions.  **1. Agmashenebel Street (network).**  **2. Chavchavadze street (network).**  5+1 pump-unit is installed for the direction of Agmashenebeli Street, managed by a "Grundfos" control panel. The system works automatically, and its function, according to the task, is to maintain the pressure in the outlet network.  1+1 pump unit is installed for the direction of Chavchavadze street.  Management of the equipment (turning on/off) is done mechanically, from the place, through the machine operator. |
| 3 | System name | Arrangement remote control and monitoring system for P/S „Gardabani Central“. |
| 4 | Main functions of the system | Monitoring:   1. Sending suction and discharge network pressure, as well as the "Setpoint" of the pressure assignment to the GWP server. 2. Sending the information obtained from the pump-set management process (mains voltage, load, engine condition, number of engines, output current, consumed power, information about the accident) to the GWP server. 3. The condition of the suction and pressure chambers.   Management of pump units:   1. Remotely switching from automatic to manual mode and vice versa. 2. Change of specified pressure setpoint. 3. Individually remove a specific pump from the control process or vice versa. 4. Remotely, turn on/off the station. 5. Remotely, reset the control system. 6. Closing/opening of electrically controlled valves.   Note: Information transfer to the GWP database must be done in real time. |
| 5 | Facilities and equipment in the station | **Aghmashenebeli street :**   1. "Grundfos" booster pump management system is installed in the station. 6X37KW capacity.   **Chavchavadze Street :**   1. The 2X37KW motor is installed by direct starting method "DOL". In this direction, there is no automatic control system. |
| 6 | Control devices (control signals) | PLC/RTU |
| 7 | List of works to be performed | **Aghmashenebeli street :**   1. Integration of "Grundfos" booster pump control system installed in the station with remote control and monitoring system. 2. Electrically controlled valve should be installed on the intake and compression manifold.   **Chavchavadze Street :**   1. Install a control shield for remote control and monitoring, with integrated "PLC"/"RTU" and HMI device. 2. The existing management system (there is a management and monitoring system in this direction), connect to the new system. 3. Install the device for measuring electrical parameters of the motor. 4. Set up a motor thermal protection system with PT100/1000 sensor input (for all motors). 5. Set up a pump thermal protection system with a PT100/1000 sensor input (for all pumps). 6. Install an electrically controlled valve on the inlet and outlet pipe. 7. Install a vibration sensor on all devices individually. |
| 8 | Special requirements | 1. It is preferable to transfer information through a network cable connection, instead of cellular connection. 2. The management system should be equipped with devices manufactured by the following companies:      * ***SOFREL***      * ***MICROCOM*** |