|  |  |  |
| --- | --- | --- |
|  | **VVF Baddi Invensys DCS health checkup & Up gradation** | **VVF India Ltd.** |
| **Purpose:**   1. Identification of the DCS hardware components which need replacement or servicing 2. Identification of system software status which need to be upgrade. 3. Requirement to Up-grade which will enhance life of system. 4. Procedure implementation to better workability of present system. | | |

|  |
| --- |
| **Vendor:** M/s Schneider Electric ( Invensys) |
| **Place:** VVF India Ltd, Baddi-Himachal Pradesh-Dist: Solan |

|  |  |
| --- | --- |
| **Following Activities are carried out in DCS health check:** | |
| Invensys system health checkup completed during 18th Jan and 19th Dec 2017.   |  |  | | --- | --- | | **Scope** | **Activity carried out/ Status** | | **Present System overview:**   * Visual inspection of hardware & software. * Physical I/O checking. * Update and submission of system architecture & Database. | Done, Updated system architecture & Database submitted.  System version obsolete, and its service and hardware are not available. | | **I/O card Checking**   * Identification of faulty I/O cards FBM/ TCA cards/Base plates. * Procedure: AI Cards 4-20 Simulation -3 points-Sampling basis   AI Cards 4-20 Measurement -3 points-Sampling base  For Digital cards short link simulation.   * Sampling 20% per I/O card. * Checking EPROM version & confirmation of its adaptability to new system. | Carried out I/o checking as per scope,  FBM 211, FBM 217, FBM242, FBM 237 are in healthy condition, its corresponding TCA cards are also in good condition.  Old FBM version will work with new updated FBM 280, EPROM update is required. | | **24 VDC Power supply & redundancy checking.**   * Checking of diode block. * Earthing checking report and suggestion for correcting same. | Checked found ok., Voltage between Neutral and Earth is within permissible limit | | **Engineer & Operator Station:**   * Expected life phase. * Synchronization between operator station & Engineering station. * SCADA backup | Stations working on different DB, Detail engineering & up gradation required.  CD drive of system is faulty. Connection to portable CD drive is not possible on old system.  SCADA backup is saved on hard disk.  Keyboard malfunctions for some keys. | | **FCP:**   * Selection FCP which will avoid uses of FCM. * Suggested FCP are FCP 270 or FCP 280 according size of FBM. * Program backup required-Vendor should submit same to VVF in CD format. * Present Processor loading. | Time Synchronization sometimes mismatched with workstations and CP.  One CP is failed, Plant is running on non- redundancy working.  Deleted core /temp/ VAR files, System volume size are now optimized.  Procedure for same is explained to baddi team by site engineer.  Station idle time is 52.5 sec, which is acceptable.  (75-80 is very good & 20-25 is indicates high loading on processor) | | **FCM:**   * Checking of bus A & B | Mesh #B cable network is in fault.  Instead of old V net communication Ethernet communication is suggested.  Also for new FCP 280 processor FCM modules are not required small N/w Like baddi. | | **Following documents are prepared and submitted to VVF Baddi.** | | | 1. Architecture of DCS------Document attached—Annexure-1 | | | 1. Std. procedure for startup and shutdown—Annexure 2 | | | 1. SOP to clear history logs in nonfunctioning of Trends—Annexure 3 | | | Above documents are already submitted to VVF Baddi Instrumentation team. | |  |  | | --- | | **System up gradation suggested by M/s Schneider Electric** | | 1. New FCP280 processor with redundancy suggested which is having 128 MB flash memory. 2. Suitable Baseplate & power supply for installing new FCP. 3. Operating system windows 7 base. 4. 24 port Ethernet Switch. 5. Software required to procure: Fox Evo V 9.3,   Fox Draw, Fox View,  IACC for new development.  Historian & service report package   1. LED workstation 2 no’s (operator & engineer station) | |  | | **Cost & delivery for up gradation of system:**   * 36,00,000/- Thirty six lacs only. (After 10% discount from vendor/Without taxes.) * Above cost includes material and engineering & service cost. * Delivery period: 16-20 weeks * 10 days of working required. * Actual system shutdown of 10 hrs required. * After upgradation system will be compatible for next 10 years.   Detailed costing sheet from vendor is attached. |   **Present System overview:**   * Visual inspection of hardware & software. * Physical I/O checking. * Update and submission of system architecture & Database. * Present Processor loading.   **I/O card Checking**   * Identification of faulty I/O cards FBM/ TCA cards/Base plates. * Procedure: AI Cards 4-20 Simulation -3 points-Sampling basis   AI Cards 4-20 Measurement -3 points-Sampling base  For Digital cards short link simulation.   * Sampling 20% per I/O card. * Checking EPROM version & confirmation of its adaptability to new system. * Faulty modules will be replaced with available modules from VVF Sion Spare DCS material.   **24 VDC Power supply & redundancy checking.**   * Checking of diode block. * Sampling 20% relay card checking. * Earthing checking report and suggestion for correcting same. * 24 VDC wiring drawing submission.   **Engineer & Operator Station:**   * New windows 7 base workstation instead of UNIX base workstation. * One workstation which will act as both operator as well as engineering station. * Workstation Split screen with singular input devices. * Graphics backup required, submit same to VVF in CD format. * Confirmation of old graphics pages extensions required for new Window 7 system workstation.       **FCP:**   * Selection FCP which will avoid uses of FCM. * Suggested FCP are FCP 270 or FCP 280 according size of FBM. * Program backup required-Vendor should submit same to VVF in CD format.   **List of hardware components available at Sion**   1. TCA card 217----9 nos.------ Installed In DCS panel but not in use. 2. Baseplate------- 4 nos.------ Installed In DCS panel but not in use. 3. FBM 237 ---------4 nos.-- --- Installed In DCS panel but not in use. 4. TCA card 237----5 nos.-------In DCS room( Packed) 5. TCA card 211----4 nos.---- --In DCS room( Packed)   In Present Baddi system FCM/FCP/FBM is tends to go in fault mode which is already running on non-redundancy mode, V-Net connectors are not making proper contact with modules, failed communication between Engineering station and operator station.  Above components can be taken out from existing sion DCS spare components and placed there at Baddi to improve the DCS performance at baddi. | |
| **Note** |  |
| **Name of Engineer** |  |
|  | |