| **System** | **Project** | **Equipment** | **The Main Parameters** |
| --- | --- | --- | --- |
| AC System | AC System Frequency | |  |
| 35kV AC Bus Voltage | |  |
| 132kV AC Bus Voltage | |  |
| 500kV AC Bus Voltage | |  |
| 500Kv ACF 3-Phase Unbalanced Current | | Section I Alarm (Delay ): Primary Value of Ground Current x Balance Coefficient (HP12/24: ( mA), SC: ( mA))  Section II Trip (Delay ): Primary Value of Ground Current x Balance Coefficient (HP12/24:  ( mA), SC: ( mA))  Section III Trip(Delay ): Primary Value of Ground Current x Balance Coefficient (HP12/24:  ( mA), SC: ( mA)) |
| 500kV Station Transformer | Oil Temperature | ⁰C I Section Alarm, ⁰C II Section Alarm |
| Winding Temperature | ⁰C I Section Alarm, ⁰C II Section Alarm |
| Oil Level | % - % |
| Cooler Switching Strategy | Upper oil temperature reach ⁰C start two set of cooler fan.  When the load exceed % of rated capacity  ( A) Start two set of cooler fan.  When the upper oil temperature drops to ⁰C two set of cooler fans all stop. |
| 500kV AC Field | Circuit Breaker | MPa highest, MPa rated, MPa alarm, 0.6MPa blocking (B1Q1, B1Q3, B2Q1, B2Q3, B3Q1, B3Q3, B3Q2, B4Q1, B4Q3, B4Q21, B5Q1, B5Q3, B6Q1, B6Q3)  MPa maximum, MPa rated, MPa alarm, MPa blocking (B1Q2, B2Q2, B5Q2, B6Q2, B7Q1, B7Q2) |
| 500kV ACF Field | Circuit Breaker | MPa maximum, MPa rated, MPa alarm, MPa lockout |
| 35kV AC Field | Circuit Breaker | MPa maximum, MPa rated, MPa alarm, MPa lockout |
| 35kV Transformer | Oil Temperature | ℃ Ⅰ section alarm, ℃ Ⅱ section alarm |
| 11kV Dry Type Transformer | Winding Temperature | Fan start temperature ℃, ℃ section I alarm, ℃ section II alarm |
| 10kV, 400V/220V Bus Voltage | | - kV, - V |
| 230V DC Voltage | | - V |
| DC System | Extinction Angle | ± ⁰ | Extinction Angle |
| DC Filter | Unbalanced Current | HP12/24: / S, HP6/42: / S, alarm |
| Converter Transformer | Top Oil Temperature | ℃ Ⅰ section alarm, ℃ Ⅱ section alarm |
| Winding Temperature | ℃ Ⅰ section alarm, ℃ Ⅱ section alarm |
| Oil Level | Low oil level≦ mm, high oil level≧ mm |
| Converter transformer Valve side Bushing | SF6 Pressure | MPa alarm, MPa trip |
| DC Field | 660kV DC Wall Bushing | MPa rated, MPa alarm, MPa trip |
| DC Voltage Divider | MPa rated, MPa section I alarm,  MPa section II alarm, MPa trip |
| DC Field Circuit Breaker | MPa rated, MPa alarm, MPa lockout |
| Electrode Line | ∣IDEL1－IDEL2∣ | pu ( A) delay s alarm, pu  ( A) unipolar s action, bipolar s action |
| Mono Pole mode Electrode Line Current | More than pu ( A) delay ms alarm, delay s action |
| Inverter | Trip Condition 1 | The number of damaged thyristor stages in a single valve> (redundant number) |
|  | Trip Condition 2 | The number of thyristor stages triggered by over-voltage protection (FOP) in a single valve> |
| DC Voltage | Reduced Voltage Operation | %, %, % Adjustable |
| Fire Fighting System | Valve Hall Trip Logic | |  |
| Starting Condition of Converter Transformer Spray Valve | |  |
| Station Transformer Spray Valve Starting Condition | |  |
| DGA | Dissolved Gas Analysis Limit  Values | | acetylene < μL/L, total hydrocarbon < μL/L, hydrogen < μL/L |
| Valve Cooling System | Valve Inlet Temperature | | ℃ Low Inlet Temperature |
| ℃ High Inlet Temperature |
| ℃ Inlet Valve Temperature is Extremely High |
| Valve Outlet Temperature | | ℃ high outlet temperature |
| Temperature Difference Limit between Inlet and Outlet of Valve | | ℃ high temperature difference between inlet and outlet of valves |
| Cooling Water Flow | | L/s is Ultra Low (Trip) |
| L/s is Low (Trip) |
| Deionized Water Flow | | L/s is Low |
| Inlet Valve Pressure | | Mpa is Ultra Low (Trip) |
| MPa is Low (Trip) |
| MPa is High (Trip) |
| MPa is Very High (Trip) |
| Outlet Pressure | | MPa is Ultra Low |
| MPa is Low |
| Cooling Water Conductivity | | µS/cm High |
| µS/cm Very High |
| Deionized Water Conductivity | | µS/cm High |
| Expansion Tank Liquid Level | | % Ultra Low (Trip) |
| % Low Level |
| % High Level |
| Expansion Tank Pressure | | MPa Very Low |
| MPa Low |
| MPa High |
| MPa Very High |
| Valve Cooling System Leakage | | %/ s (The temperature change of inlet valve is less than ℃) |