

TECHNICAL NOTE

Market Survey for JT-60SA Electron Cyclotron Power Supplies

1. Introduction

Fusion for Energy (F4E) is conducting a market survey to identify suppliers capable of designing, manufacturing, testing and delivering six high-voltage power supply sets for six gyrotrons of the JT-60SA Electron Cyclotron system in Naka, Japan.

2. Scope of Supply

Each of the six sets includes one High Voltage Main Power Supply (HVMPs), one Body Power Supply (BPS), one Anode Power Supply (APS), associated transformers, control and protection systems, cooling systems, dummy loads and auxiliaries.

3. Main Characteristics

HVMPs: output voltage 0-60 kV, controlled voltage ramp-up in 0.1 ms, voltage overshoot <2%, voltage accuracy 0.5%, voltage ripple <1%, output current up to 80 A.

BPS: output voltage 0-35 kV, controlled voltage ramp-up in 0.1ms, voltage overshoot <1%, voltage accuracy 0.5%, voltage ripple <1%, output current up to 0.1 A.

APS: output voltage 0-50 kV, controlled voltage ramp-up in 0.1ms, voltage overshoot <1%, voltage accuracy 0.5%, voltage ripple <0.2%, output current up to 0.1 A.

The system must support pulse operation up to 100 s every 1800s at nominal ratings, fast shutdown below 10 microseconds and fast on-off modulation up to 5 kHz.

4. Functional Requirements

The power supplies shall support gyrotron start-up, power modulation, anode optimization, fault protection and long-pulse plasma operation.

5. Control and Protection

Each set includes dedicated control and protection equipment providing local and remote operation, waveform generation, monitoring, diagnostics and high-speed fault mitigation.

6. Installation and Delivery

The procurement includes design, manufacture, testing, delivery to Naka (Japan), documentation, training, spare parts and on-site support.

Please answer the Market Survey following this [LINK](#)