

# International Conference on Fast Reactors and Related Fuel Cycles: Next Generation Nuclear Systems for Sustainable Development (FR17)



Contribution ID: 514

Type: POSTER

## Experiences during construction & Commissioning of electrical power Generation and Evacuation systems in PFBR

Wednesday 28 June 2017 17:50 (1h 10m)

### Abstract

Electric power supply comprising of both OFF site and ON site power supply systems is designed to facilitate the emergency electric power supply (Class IE) system is generally categorized into three types based on the

1. AC power supply to Auxiliaries, which can tolerate short interruption upto 3 minutes is classified as Class-III AC Emergency power supply.
2. No break AC power supply to auxiliaries derived from class-III buses through rectifier/charger and inverter with a battery backup is called class-II power supply.
3. No break DC power supply to auxiliaries derived from Class-III buses through rectifier/charger with a battery backup is called Class-I power supply. All Emergency power supply systems are designed to fulfill the safety criteria for Class-IE power supply system such as adequate redundancy by independent division having necessary capability & reliability, physical separation and functional isolation etc.

Variable speed AC drives are provided for the two each PSP & SSP pumps. An AC Pony motor is additionally provided for each of the primary sodium pumps. The electrical heating system for sodium circuits are designed to prevent arcing damage to the pipe and equipment that might be caused by the electrical heaters by adopting ungrounded power supply system. The insulation monitoring devices are provided in sodium circuits. The heaters on the primary sodium and Argon line are triplicated and heaters on the secondary sodium systems are duplicated.

Each section of the 6.6kV switchgear, 415V PCC, MCC, HCCs are provided with Switchgear Interface Panel to facilitate necessary interface/interlock for control, metering, indication, Annunciation and also provides galvanic isolation between electrical equipment and main control room.

The installation of about 500 panels at various buildings are challenging due to layout constraints, comp

### Country/Int. Organization

Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI)  
Department of Atomic Energy,  
Kalpakkam 603 102, Tamilnadu, India

**Author:** Mr OBULI B, OBULI B (PFBR, BHAVINI, DEPARTMENT OF ATOMIC ENERGY, KALPAKKAM, INDIA)

**Co-authors:** Mr PRABODHA KUMAR PRUSTY, PRABODHA (PFBR, BHAVINI, DEPARTMENT OF ATOMIC ENERGY, INDIA); Mr STHALASAYANAM, sthalasayanam (PFBR, BHAVINI, DEPARTMENT OF ATOMIC ENERGY, INDIA)

**Presenter:** Mr VINAYAGAMOORTHY, Rajan Babu (Director (Technical))

**Session Classification:** Poster Session 2

**Track Classification:** Track 2. Fast Reactor Operation and Decommissioning